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<b>PCS Special:</b>	<b>17 November 2025</b>
<b>UPPCS</b>	<b>Where Booker Prize winner Szalay and Nobel laureate Krasznahorkai meet</b> <b>जहाँ Booker Prize विजेता Szalay और Nobel laureate Krasznahorkai मिलते हैं</b>

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# Where Booker Prize winner Szalay and Nobel laureate Krasznahorkai meet

Recent award-winning books by several writers on post-war/post-socialist Europe don't promise resolution but simply keep a ledger of how people live when history moves on, leaving them to work out the finer details

PCS

Vasudevan Mukundh

**H**ungarian-British writer David Szalay's *Flesh* has won the Booker Prize for 2025, further strengthening a spate of award-winning fiction preserving the spectre of post-war/post-socialist Europe in the public imagination, since Svetlana Alexievich won the Nobel Prize in literature. Szalay's father was Hungarian and, after spending time in the U.K. and Belgium, he moved back to the Central European country. *Flesh* is closely tied to the country: its protagonist returns there and scenes unfold amid late-socialist urbanism.

It would seem this particular condition hasn't ended but has in fact become a climate. Institutions carry on, often barely, and while there are freedom and dignity in practice, they're mediated by everyday systems reminiscent of the erstwhile Soviet Union's heyday. In their celebrated novels, László Krasznahorkai (also from Hungary, and who has been awarded the literature Nobel this year), Olga Tokarczuk, Peter Handke, Dubravka Ugrešić, Georgi Gospodinov, Jenny Erpenbeck, Mircea Cărtărescu, Serhiy Zhadan, and Kapka Kassabova have all chosen forms to match their materials – of long circuits, fragments, speculative frames, and often plain diaries of passage. Their books don't promise resolution but simply keep a ledger of how people maintain lives when history moves on, leaving them to work out the details.

**Resonant themes**

A particularly resonant theme is systems changing but not the furniture. Consider *Baron Wenckheim's Homecoming* by Krasznahorkai, which turns a provincial town into a nearly lifeless machine with the cultural house staging events, the police enforcing order, the local press manufacturing anticipation, only for

nothing of substance to arrive.

Likewise, in Erpenbeck's *Kairos*, the Wall falls and the institutions of former East Germany dissolve on paper, but the habits they produced in people, from deference to the hunger for recognition, endure. Cărtărescu's *Solenoid* provides the pre-history to this fate in a late-communist Bucharest that's an apparatus of inspections and petty humiliation, all to train in the local population a posture of inwardness. It seems after 1989, that posture didn't just evaporate but instituted in citizens a wariness of new freedoms.

Another theme centres on mobility. Tokarczuk's *Flights* is an ethnography of motion, of bodies in transit in airports and ferries and through museums and cabinets of curiosities. Yet, *Flights* doesn't celebrate movement so much as it measures its costs. Ugrešić's *The Ministry of Pain* does something similar for the former Yugoslavia, with its visas, teaching contracts, work permits, and residency papers, and ultimately the drain of explaining oneself to an outsider that won't recognise trauma unless it's in action takes a toll.

Kassabova's *Border* stands on the ground where crossings were once forbidden and shows how routes and smugglers survive rule changes. For all three, mobility is work rather than freedom, and for which you'd better have your papers in order.

**Serving nostalgia**

*Time Shelter* by Gospodinov also throws up nostalgia as a way to govern a people, with clinics that recreate past decades becoming popular only for elections and new referendums to formalise a backward turn, accentuated by the book's speculative style. While the travellers in *Flights* resist the precariousities of their present by staying on the move, they're still visible in what the museums choose

to display, ergo what nations choose to monumentalise. *Kairos* similarly documents who gets to tell the story of the GDR (East Germany), who gets work as a witness, and who is told to move on.

Finally, we have language, authority, and the idea that the two are often the same thing. In *The Moravian Night*, Handke moves through Balkan spaces where most speech is only official narrative. He worries about the boundary between testimony and performance and forces the reader to sit with the uncertainty of what can be said without being pressed into someone else's service.

*The Ministry of Pain* examines this scene from another angle, mapping how the literary market sorts Balkan voices by their appeal to Western expectations. Ugrešić is cold-eyed about the demand for tidy accounts of war and exile and about the compromises writers make to be published. In the same vein, *Solenoid* retreats from state language into private architecture without losing sight of the civic pressure that prompted the retreat.

**Ongoing wars**

War is of course always ongoing in these pages. *The Orphanage* by Zhadan sits close to the frontline and writes from checkpoints and severed phone lines through constant interruption. Kassabova shows the long tail of gun-laden borders that keep producing fear and opportunity after the armies leave. And while Krasznahorkai's towns feel demilitarised, they remain garrisoned by bureaucracy. Read together with Erpenbeck's *Kairos*, it seems the people are still fighting the war, just that the enemy is the friction that stayed behind.

Szalay's *Flesh* strengthens this revival of sorts by recording late-socialist housing and thin public services against Western-style consumption. There's administrative gatekeeping once again but also the fraying of a diaspora, in terms of

languages lost across borders and meetings staged on neutral ground. Without pronouncing a thesis, *Flesh* shows how lives become synchronised to institutions that changed in all but their tempo.

These books are also stripped of melodrama, use a low register, lengthen outcomes until they're indistinguishable from destiny, pare scenes down to hard edges, preclude sentiment, and meticulously record every small transaction between nativity and exile. The effect is to avoid consoling frames and to keep from vindicating dignity.

Three decades have passed since the political ruptures of 1989-91, long enough for writers to observe a generation grow up inside the new order. There have also been geopolitical pressures on borders, including the 2015 refugee crisis, the rise of nationalist parties, the institutionalisation of "memory laws", and the return of large-scale war to Europe. In these conditions, the questions of what counts as European and how state socialism ought to be remembered have again become relevant, aided by an international reading market more curious about intra-European peripheries and literary prizes that foreground translators' labour.

Post-war and post-socialist narratives from Eastern and Central Europe add a record of how large events settle into ordinary life, and thus constitute a more relevant memorialisation in their own right. Scholarly histories of World War II and the fall of the Soviet Union fixed the sequence and scale of violence and reform, centring institutions, leaders, treaties, and borders, whereas these recent novels muster a counter-archive of small, repeatable situations that those accounts could never hold. Thus, they don't correct the record so much as cut its judgment to the size of what people can actually do.

## Where Booker Prize winner Szalay and Nobel laureate Krasznahorkai meet जहाँ Booker Prize विजेता Szalay और Nobel laureate Krasznahorkai मिलते हैं

- Hungarian-British writer David Szalay's *Flesh* has won the Booker Prize for 2025, further strengthening a spate of award-winning fiction preserving the spectre of post-war/post-socialist Europe in the public imagination, since Svetlana Alexievich won the Nobel Prize in literature.
- हंगेरियन-ब्रिटिश लेखक डेविड सज़ालय की प्लेश ने 2025 के बुकर पुरस्कार को जीता है, जो पुरस्कार-विजेता कथा की एक श्रृंखला को और मजबूत करता है जो युद्धोत्तर/समाजवादी-उत्तर यूरोप के भूत को सार्वजनिक कल्पना में संरक्षित रखती है, जब से स्वेतलाना अलेक्सिएविच ने साहित्य में नोबेल पुरस्कार जीता।
- Szalay's father was Hungarian and, after spending time in the U.K. and Belgium, he moved back to the Central European country.
- सज़ालय के पिता हंगेरियन थे और, यू.के. और बेल्जियम में समय बिताने के बाद, वे मध्य यूरोपीय देश लौट आए।
- *Flesh* is closely tied to the country: its protagonist returns there and scenes unfold amid late-socialist urbanism.
- प्लेश देश से निकटता से जुड़ा हुआ है: इसका नायक वहाँ लौटता है और दृश्य उत्तर-सामाजिकतावादी शहरीवाद के बीच विकसित होते हैं।
- It would seem this particular condition hasn't ended but has in fact become a climate.
- ऐसा प्रतीत होता है कि यह विशेष स्थिति समाप्त नहीं हुई है बल्कि वास्तव में एक जलवायु बन गई है।





- Institutions carry on, often barely, and while there are **freedom** and **dignity** in practice, they're mediated by everyday systems reminiscent of the erstwhile **Soviet Union's** heyday. संस्थाएँ जारी रहती हैं, अक्सर मुश्किल से, और जबकि व्यवहार में **स्वतंत्रता** और **गरिमा** है, वे पूर्व **सोवियत संघ** के चरमकाल की याद दिलाने वाली दैनिक प्रणालियों द्वारा मध्यस्थ होती हैं।
- In their celebrated novels, **László Krasznahorkai** (also from **Hungary**, and who has been awarded the literature **Nobel** this year), **Olga Tokarczuk**, **Peter Handke**, **Dubravka Ugrešić**, **Georgi Gospodinov**, **Jenny Erpenbeck**, **Mircea Cărtărescu**, **Serhiy Zhadan**, and **Kapka Kassabova** have all chosen forms to match their materials — of **long circuits**, **fragments**, **speculative frames**, and often plain **diaries of passage**. उनके उत्सवी उपन्यासों में, **लास्ज़्लो क्रास्नाहोरकाई** (भी हंगरी से, और जिसे इस वर्ष साहित्य **नोबेल** पुरस्कार दिया गया), **ओल्गा टोकार्चुक**, **पीटर हांदके**, **दुब्रावका ऊग्रेशिक**, **जॉर्जी गोस्पोडिनोव**, **जेनी एर्पेनबेक**, **मिर्सिया कातरिस्कु**, **सेरही झादान**, और **कापका कसाबोवा** ने अपनी सामग्री से मेल खाने वाले रूप चुने हैं — **लंबे सर्किटों** के, **खंडों** के, **कल्पनाशील फ्रेमों** के, और अक्सर सादे **मार्ग डायरी** के।
- Their books don't promise **resolution** but simply keep a ledger of how people maintain lives when **history** moves on, leaving them to work out the **details**.
- उनकी किताबें **समाधान** का वादा नहीं करतीं बल्कि केवल एक लेजर रखती हैं कि लोग जीवन कैसे बनाए रखते हैं जब **इतिहास** आगे बढ़ जाता है, उन्हें **विवरण** सुलझाने को छोड़कर।

## Resonant themes

### गूजते विषय

- A particularly resonant theme is **systems changing** but not the **furniture**. एक विशेष रूप से गूजता विषय है **प्रणालियों का बदलना** लेकिन **फर्नीचर** का नहीं।
- Consider **Baron Wenckheim Homecoming** by **Krasznahorkai**, which turns a provincial town into a nearly **lifeless machine** with the cultural house staging events, the police enforcing **order**, the local press manufacturing **anticipation**, only for nothing of substance to arrive. **क्रास्नाहोरकाई** द्वारा **बारन वेंकहेम्स होमकमिंग** पर विचार करें, जो एक प्रांतीय शहर को एक लगभग **निर्जन मशीन** में बदल देता है जिसमें सांस्कृतिक सदन कार्यक्रम आयोजित करता है, पुलिस **व्यवस्था** लागू करती है, स्थानीय प्रेस **अपेक्षा** का निर्माण करता है, केवल पदार्थ की कोई चीज न आने के लिए।
- Likewise, in **Erpenbeck Kairos**, the **Wall** falls and the institutions of former **East Germany** dissolve on paper, but the habits they produced in people, from **deference** to the hunger for **recognition**, endure. इसी तरह, **एर्पेनबेक** के **काइरोस** में, **दीवार** गिरती है और पूर्व **जर्मनी** की संस्थाएँ कागज पर भंग हो जाती हैं, लेकिन वे लोगों में पैदा की गई आदतें, **आज्ञाकारिता** से **मान्यता** की भूख तक, बनी रहती हैं।
- **Cărtărescu's Solenoid** provides the pre-history to this fate in a **late-communist Bucharest** that's an apparatus of inspections and petty **humiliation**, all to train in the local population a posture of **inwardness**. **कातरिस्कु** का **सोलोनॉइड** इस भाग्य की पूर्व-इतिहास प्रदान करता है एक **उत्तर-साम्यवादी बुखारेस्ट** में जो निरीक्षणों और छोटी **अपमान** का उपकरण है, सभी स्थानीय आबादी में **आंतरिकता** की मुद्रा प्रशिक्षित करने के लिए।
- It seems after **1989**, that posture didn't just evaporate but instituted in citizens a **wariness** of new **freedoms**. ऐसा प्रतीत होता है **1989** के बाद, वह मुद्रा केवल वाष्पित नहीं हुई बल्कि नागरिकों में नई **स्वतंत्रताओं** की **सावधानी** संस्थापित कर दी।
- Another theme centres on **mobility**. एक अन्य विषय **गतिशीलता** पर केंद्रित है।
- **Tokarczuk Flights** is an ethnography of **motion**, of bodies in transit in **airports** and **ferries** and through **museums** and **cabinets of curiosities**. **टोकार्चुक** का **फ्लाइट्स** का नृवंशविज्ञान है, **हवाई अड्डों** और **फेरी** में पारगमन में शारीरिकों का और **संग्रहालयों** और **क्यूरियोसिटी कैबिनेट्स** के माध्यम से।
- Yet, **Flights** doesn't celebrate **movement** so much as it measures its **costs**. फिर भी, **फ्लाइट्स** का उत्सव नहीं करता जितना कि इसकी **लागतों** को मापता है।
- **Ugrešić's The Ministry of Pain** does something similar for the former **Yugoslavia**, with its **visas**, **teaching contracts**, **work permits**, and **residency papers**, and ultimately the drain of explaining oneself to an outsider that won't recognise **trauma** unless it's in action takes a toll. **ऊग्रेशिक** का **द मिनिस्ट्री ऑफ पेन** पूर्व **यूगोस्लाविया** के लिए कुछ समान करता है, इसके **वीजा**, **शिक्षण**



अनुबंध, कार्य अनुमतियां, और निवास पत्रों के साथ, और अंततः एक बाहरी व्यक्ति को खुद को समझाने की थकान जो ट्रॉमा को मान्यता नहीं देगा जब तक कि यह कार्रवाई में न हो, एक टोल लेती है।

- **Kassabova Border** stands on the ground where **crossings** were once forbidden and shows how **routes** and **smugglers** survive rule changes.
- **कसाबोवा** का **बॉर्डर** उस जमीन पर खड़ा है जहां **क्रॉसिंग** कभी निषिद्ध थीं और दिखाता है कि **मार्ग** और **स्मगलर** नियम परिवर्तनों से कैसे जीवित रहते हैं।
- For all three, **mobility** is **work** rather than **freedom**, and for which you'd better have your **papers** in order. तीनों के लिए, **गतिशीलतास्वतंत्रता** के बजाय **काम** है, और जिसके लिए आपको बेहतर होगा कि आपके **कागजात** व्यवस्था में हों।

## Serving nostalgia

### नॉस्टैल्जिया परोसना

- **Time Shelter** by **Gospodinov** also throws up **nostalgia** as a way to govern a people, with clinics that recreate past decades becoming popular only for elections and new referendums to formalise a backward turn, accentuated by the book's **speculative style**.
- **गोस्पोडिनोव** की **टाइम शेल्टर** भी **नॉस्टैल्जिया** को लोगों को शासित करने का एक तरीका बताती है, जिसमें पिछले दशकों को फिर से बनाने वाले क्लिनिक चुनावों के लिए लोकप्रिय हो जाते हैं और नए जनमत संग्रह पीछे की ओर मुड़ने को औपचारिक बनाते हैं, जो किताब की **कल्पनाशील शैली** से और बढ़ जाता है।
- While the travellers in **Flights** resist the **precarities** of their present by staying on the move, they're still visible in what the **museums** choose to display, ergo what **nations** choose to **monumentalism**.
- जबकि **फ्लाइट्स** में यात्री अपनी वर्तमान की **अनिश्चितताओं** का विरोध चलते रहकर करते हैं, वे फिर भी उन चीजों में दिखाई देते हैं जो **संग्रहालय** प्रदर्शित करना चुनते हैं, अर्थात् **राष्ट्र** क्या **स्मारकीकरण** करना चुनते हैं।
- **Kairos** similarly documents who gets to tell the story of the **GDR (East Germany)**, who gets work as a **witness**, and who is told to **move on**. **काइरोस** भी इसी तरह दस्तावेज करता है कि **GDR (पूर्व जर्मनी)** की कहानी कौन बताता है, **गवाह** के रूप में काम किसे मिलता है, और किसे **आगे बढ़ने** को कहा जाता है।
- Finally, we have **language**, **authority**, and the idea that the two are often the same thing. अंत में, हमारे पास **भाषा**, **सत्ता**, और यह विचार है कि दोनों अक्सर एक ही चीज हैं।
- In **The Moravian Night**, **Handke** moves through **Balkan** spaces where most speech is only **official narrative**. **द मोरावियन नाइट** में, **हांदकेबाल्कन** स्थानों से गुजरता है जहां अधिकांश बोलचाल केवल **आधिकारिक कथा** है।
- He worries about the boundary between **testimony** and **performance** and forces the reader to sit with the **uncertainty** of what can be said without being pressed into someone else's **service**. वह **गवाही** और **प्रदर्शन** के बीच की सीमा को लेकर चिंतित है और पाठक को उस **अनिश्चितता** के साथ बैठने को मजबूर करता है कि क्या कहा जा सकता है बिना किसी और की **सेवा** में दबे।
- **The Ministry of Pain** examines this scene from another angle, mapping how the **literary market** sorts **Balkan voices** by their appeal to **Western expectations**. **द मिनिस्ट्री ऑफ पेन** इस दृश्य को दूसरे कोण से जांचता है, यह मैप करता हुआ कि **साहित्यिक बाजारबाल्कन आवाजों** को **पश्चिमी अपेक्षाओं** के प्रति उनकी अपील के आधार पर कैसे छांटता है।
- **Ugrešić** is cold-eyed about the demand for tidy accounts of **war** and **exile** and about the **compromises** writers make to be published. **उग्रेशिकयुद्ध** और **निर्वासन** के साफ-सुथरे वृत्तान्तों की मांग और लेखकों द्वारा प्रकाशित होने के लिए किए गए **समझौतों** को लेकर ठंडी नजर रखती है।

## Ongoing wars

### चल रहे युद्ध

- **War** is of course always ongoing in these pages. **युद्ध** निश्चित रूप से इन पृष्ठों में हमेशा चल रहा है।



- **The Orphanage** by Zhadan sits close to the **frontline** and writes from **checkpoints** and **severed phone lines** through constant **interruption**. झादान की द ऑफ़नेजफ्रंटलाइन के करीब बैठती है और चेकपॉइंट्स और कटे फोन लाइनों से लगातार रुकावट के माध्यम से लिखती है।
- **Kassabova** shows the long tail of **gun-laden borders** that keep producing **fear** and **opportunity** after the armies leave. कसाबोवाबंदूकें से लदे सीमाओं की लंबी पूंछ दिखाती है जो सेनाओं के चले जाने के बाद भी डर और अवसर पैदा करती रहती हैं।
- And while **Krasznahorkai's** towns feel **demilitarised**, they remain **garrisoned** by **bureaucracy**. और जबकि क्रास्नाहोरकाई के शहर असैन्यीकृत लगते हैं, वे नौकरशाही द्वारा गैरीसन बने रहते हैं।
- Read together with **Erpenbeck's Kairos**, it seems the people are still fighting the **war**, just that the **enemy** is the **friction** that stayed behind. एर्पेनबेक के काइरोस के साथ पढ़ें तो लगता है कि लोग अभी भी युद्ध लड़ रहे हैं, बस दुश्मन वह घर्षण है जो पीछे रह गया।
- **Szalay's Flesh** strengthens this revival of sorts by recording **late-socialist housing** and **thin public services** against **Western-style consumption**. सज़ालय की फ्लेश इस तरह के पुनरुद्धार को मजबूत करती है उत्तर-सामाजिकतावादी आवास और पतली सार्वजनिक सेवाओं को पश्चिमी शैली के उपभोग के खिलाफ रिकॉर्ड करके।
- There's **administrative gatekeeping** once again but also the **fraying** of a **diaspora**, in terms of **languages lost** across borders and meetings staged on **neutral ground**. एक बार फिर प्रशासनिक द्वारपालिता है लेकिन साथ ही एक प्रवासी समुदाय का क्षय भी, सीमाओं के पार खोई गई भाषाओं और तटस्थ भूमि पर आयोजित बैठकों के संदर्भ में।
- Without pronouncing a **thesis**, **Flesh** shows how lives become **synchronised** to institutions that changed in all but their **tempo**. बिना कोई थीसिस घोषित किए, फ्लेश दिखाता है कि जीवन उन संस्थाओं से कैसे **सिंक्रोनाइज़** हो जाते हैं जो अपनी गति को छोड़कर सब कुछ बदल चुकी हैं।
- These books are also stripped of **melodrama**, use a **low register**, lengthen **outcomes** until they're indistinguishable from **destiny**, pare scenes down to **hard edges**, preclude **sentiment**, and meticulously record every small **transaction** between **nativity** and **exile**. ये किताबें **मेलोड्रामा** से भी मुक्त हैं, **निम्न रजिस्टर** का उपयोग करती हैं, **परिणामों** को इतना लंबा करती हैं कि वे **भाग्य** से अविभेद्य हो जाते हैं, दृश्यों को **कठोर किनारों** तक कम करती हैं, **भावुकता** को रोकती हैं, और **जन्म** और **निर्वासन** के बीच हर छोटे **लेन-देन** को सूक्ष्मता से रिकॉर्ड करती हैं।
- The effect is to avoid **consoling frames** and to keep from **vindicating dignity**. प्रभाव सांत्वना देने वाले फ्रेम से बचने और गरिमा को न्यायोचित ठहराने से दूर रहने का है।
- **Three decades** have passed since the political ruptures of **1989-91**, long enough for writers to observe a generation grow up inside the **new order**. **1989-91** के राजनीतिक विच्छेदों को **तीन दशक** बीत चुके हैं, इतना पर्याप्त कि लेखक **नई व्यवस्था** के अंदर एक पीढ़ी को बड़ा होते देख सकें।
- There have also been **geopolitical pressures** on borders, including the **2015 refugee crisis**, the rise of **nationalist parties**, the institutionalisation of "**memory laws**", and the return of **large-scale war to Europe**. सीमाओं पर **भू-राजनीतिक दबाव** भी रहे हैं, जिसमें **2015 शरणार्थी संकट**, **राष्ट्रवादी दलों** का उदय, "**स्मृति कानूनों**" का संस्थागतीकरण, और **यूरोप में बड़े पैमाने पर युद्ध** की वापसी शामिल है।
- In these conditions, the questions of what counts as **European** and how **state socialism** ought to be remembered have again become relevant, aided by an **international reading market** more curious about **intra-European peripheries** and **literary prizes** that foreground **translators' labour**. इन परिस्थितियों में, **यूरोपीय** क्या गिना जाए और **राज्य समाजवाद** को कैसे याद किया जाना चाहिए, ये प्रश्न फिर प्रासंगिक हो गए हैं, जिसकी सहायता एक **अंतरराष्ट्रीय पठन बाजार** ने की जो **यूरोप-भीतरी परिधियों** के प्रति अधिक जिज्ञासु है और **साहित्यिक पुरस्कारों** ने जो **अनुवादकों के श्रम** को आगे रखते हैं।
- **Post-war** and **post-socialist** narratives from **Eastern and Central Europe** add a record of how large events settle into **ordinary life**, and thus constitute a more relevant **memorialisation** in their own right. **पूर्वी और मध्य यूरोप** से **युद्धोत्तर और समाजवादी-उत्तर** कथाएं यह रिकॉर्ड जोड़ती हैं कि बड़े घटनाक्रम **साधारण जीवन** में कैसे बस जाते हैं, और इस प्रकार स्वयं में अधिक प्रासंगिक **स्मृति-चिह्न** बनाती हैं।
- **Scholarly histories of World War II** and the fall of the **Soviet Union** fixed the **sequence and scale of violence and reform**, centring **institutions, leaders, treaties, and borders**,



whereas these recent novels muster a **counter-archive** of **small, repeatable situations** that those accounts could never hold.

- **विश्व युद्ध II** और **सोवियत संघ** के पतन के **शैक्षणिक इतिहासों** ने **हिंसा** और **सुधार** की **अनुक्रम** और **पैमाने** को स्थिर किया, **संस्थाओं**, **नेताओं**, **संधियों**, और **सीमाओं** को केंद्र में रखते हुए, जबकि ये हालिया उपन्यास उन **छोटी, दोहराई जा सकने वाली स्थितियों** का एक **प्रति-संग्रह** जुटाते हैं जिन्हें वे वृत्तांत कभी समा नहीं सकते थे।
- Thus, they don't correct the **record** so much as cut its **judgment** to the size of what people can actually do.
- इस प्रकार, वे **रिकॉर्ड** को सुधारने की बजाय उसके **निर्णय** को उस आकार तक काटते हैं जो लोग वास्तव में कर सकते हैं।

## GS Paper 1: History, Society and Geography

### TOPICS COVERED

17 November 2025

History	
1.	<b>Minister apologises for remarks against Raja Ram Mohan Roy</b> राजा राम मोहन राय के खिलाफ टिप्पणी पर मंत्री ने माफी मांगी
2.	<b>Stone nagaswaram at Tamil Nadu temple to hog the limelight at consecration ritual</b> तमिलनाडु मंदिर में स्टोन नागस्वरम अभिषेक अनुष्ठान में आकर्षण का केंद्र बनेगा
Society	
3.	<b>The legal hoodwinking of Adivasis</b> आदिवासियों की कानूनी चालबाज़ी
Geography	
4.	<b>Maduro decries joint exercises by U.S. and Trinidad and Tobago</b> मद्रुरो ने अमेरिका और त्रिनिदाद एवं टोबैगो के संयुक्त अभ्यासों की निंदा की
5.	<b>Bridge collapse at Congo cobalt mine after rain kills over 30 informal miners</b> कांगो कोबाल्ट खदान में पुल गिरने से बारिश के बाद 30 से अधिक अनौपचारिक खनिकों की मौत
6.	<b>Haiti town mourns as it staggers from Hurricane Melissa</b> हरिकेन मेलिसा से जूझते हुए हैती का कस्बा शोक में डूबा
7.	<b>In Chile, a presidential vote pits a communist against the far right</b> चिली में, राष्ट्रपति चुनाव एक कम्युनिस्ट को अति-दक्षिणपंथ के खिलाफ खड़ा करता है



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



8.

**Czechs plan nuclear expansion to double output, end fossil fuel reliance**  
चेक गणराज्य परमाणु विस्तार की योजना बना रहा है ताकि उत्पादन दोगुना हो और जीवाश्म ईंधन पर निर्भरता समाप्त हो

**History**

**17/11/2025**

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# Minister apologises for remarks against Raja Ram Mohan Roy

**TGS : History**  
BHOPAL/KOLKATA

Madhya Pradesh Higher Education Minister and BJP leader Inder Singh Parmar on Sunday apologised for his remarks on social reformer Raja Ram Mohan Roy, whom he had termed a "British agent" while accusing him of aiding missionaries in religious conversion.

Mr. Parmar made the controversial remarks during an event on Saturday to mark the 150th birth anniversary of tribal icon Birsa Munda

"I was discussing his [Birsa Munda] life and discussing the British conspiracy. I mistakenly and in a flow said something offensive about social reformer Raja Ram Mohan Roy and I regret it. I repent for it," Mr. Parmar said in an apology video shared on X.

His remarks drew sharp criticism from Congress leaders in the State as well as the Trinamool Congress in West Bengal.

"There was a vicious cycle going on in Bengal and nearby regions to change the faith of the people of this county through English education and the British had made several Indians as fake social reformers. Raja Ram Mohan Roy was one of them who kept working as a British agent," Mr. Parmar had said on Saturday.

West Bengal Minister and Trinamool leader Sashi Panja said the women of the country knew it was because of Raja Ram Mohan Roy that the Sati system had been abolished.

"Calling Raja Ram Mohan Roy, the man who abolished Sati and ushered modernity, humanism & women's rights, a 'British agent' is not a slip. It's the BJP's *Bangla-Birodhi* (anti-Bengali) mindset on full display. When you can't



Inder Singh Parmar

match Bengal's intellect, you try to defame it," Trinamool's Rajya Sabha member Ritabrata Banerjee said.

"Failing miserably to make any impact in Bengal, the BJP has now resorted to its dirtiest tactic, defaming Bengal and the towering icons who shaped our civilisation.

From Rabindranath Tagore to Swami Vivekananda to Ishwar Chandra Vidyasagar, no legend has been spared from the BJP's relentless insults," the Trinamool said in an X post.

### 'Communal mindset'

Madhya Pradesh Leader of the Opposition and Congress MLA Umang Singhar termed the remarks "shameful" and alleged that they were a "BJP conspiracy to bring those who serve their ideology to the centre of history and to defame the real nation-builders".

"Even though the Minister has apologised after the public's outrage, the question is - Can a communal mindset change with just one apology? Is a mindset that distorts and twists history acceptable while holding a ministerial position?" Mr. Singhar asked on X.

West Bengal BJP president Samik Bhattacharya said he would raise the issue with the party's central leadership but added that the Trinamool was blowing the issue out of proportion.

## Minister apologises for remarks against Raja Ram Mohan Roy राजा राम मोहन राय के खिलाफ टिप्पणी पर मंत्री ने माफी मांगी

•Madhya Pradesh Higher Education Minister and **BJP leader Inder Singh Parmar** on Sunday apologised for his remarks on social reformer **Raja Ram Mohan Roy**, whom he had termed a "**British agent**" while accusing him of aiding missionaries in religious conversion.

मध्यप्रदेश उच्च शिक्षा मंत्री और **भाजपा नेता इंदर सिंह परमार** ने रविवार को सामाजिक सुधारक **राजा राम मोहन राय** पर अपनी टिप्पणी के लिए माफी मांगी, जिन्हें उन्होंने धार्मिक परिवर्तन में मिशनरियों की मदद करने का आरोप लगाते हुए "**ब्रिटिश एजेंट**" कहा था।

•Mr. Parmar made the controversial remarks during an event on Saturday to mark the **150th birth anniversary of tribal icon Birsa Munda**

श्री परमार ने यह विवादित टिप्पणी शनिवार को जनजातीय नायक **बिरसा मुंडा की 150वीं जयंती** के उपलक्ष्य में आयोजित कार्यक्रम के दौरान की।

•"I was discussing his [Birsa Munda] life and discussing the British conspiracy.

"मैं उनके [बिरसा मुंडा] जीवन और ब्रिटिश साजिश पर चर्चा कर रहा था।

•I mistakenly and in a flow said something offensive about social reformer Raja Ram Mohan Roy and I regret it.

मैंने गलती से और बहाव में सामाजिक सुधारक राजा राम मोहन राय के बारे में कुछ आपत्तिजनक कह दिया और मुझे इसका regret है।

•I repent for it," Mr. Parmar said in an **apology video** shared on X.

"मैं इसके लिए पश्चाताप करता हूँ," श्री परमार ने X पर साझा किए गए **माफी वीडियो** में कहा।

•His remarks drew **sharp criticism** from **Congress leaders** in the State as well as the **Trinamool Congress** in West Bengal.

उनकी टिप्पणियों ने राज्य में **कांग्रेस नेताओं** तथा पश्चिम बंगाल में **तृणमूल कांग्रेस की कड़ी आलोचना** को जन्म दिया।

•"There was a **vicious cycle** going on in Bengal and nearby regions to change the faith of the people of this county through **English education and the British had made several Indians as fake social reformers**.

"बंगाल और आसपास के क्षेत्रों में **अंग्रेजी शिक्षा** के माध्यम से लोगों का धर्म बदलने का एक **दुष्क्र** चल रहा था और ब्रिटिशों ने कई भारतीयों को **नकली सामाजिक सुधारक** बना दिया था।"

•**Raja Ram Mohan Roy was one of them who kept working as a British agent**," Mr. Parmar had said on Saturday.

राजा राम मोहन राय उनमें से एक थे जो **ब्रिटिश एजेंट** की तरह काम करते रहे," श्री परमार ने शनिवार को कहा था।

•**West Bengal Minister and Trinamool leader Sashi Panja** said the women of the country knew it was because of Raja Ram Mohan Roy that the **Sati system** had been abolished.

**पश्चिम बंगाल की मंत्री और तृणमूल नेता साशी पांजा** ने कहा कि देश

की महिलाएँ जानती हैं कि **सती प्रथा** का उन्मूलन राजा राम मोहन राय के कारण हुआ था।

• "Calling Raja Ram Mohan Roy, the man who abolished Sati and ushered **modernity, humanism & women's rights**, a 'British agent' is not a slip.

"सती प्रथा समाप्त करने वाले और **आधुनिकीकरण, मानवतावाद और महिलाओं के अधिकारों** के वाहक राजा राम मोहन राय को 'ब्रिटिश एजेंट' कहना कोई चूक नहीं है।



- It's the BJP's **Bangla-Birodhi (anti-Bengali) mindset** on full display.  
यह भाजपा की **बंगला-विरोधी मानसिकता** का स्पष्ट प्रदर्शन है।
- When you can't match Bengal's intellect, you try to defame it," Trinamool's **Rajya Sabha member Ritabrata Banerjee** said.  
“जब आप बंगाल की बुद्धिमत्ता की बराबरी नहीं कर सकते, तो आप उसे बदनाम करने की कोशिश करते हैं,” तृणमूल के **राज्यसभा सदस्य रितब्रत बनर्जी** ने कहा।
- “Failing miserably to make any impact in Bengal, the BJP has now resorted to its **dirtiest tactic**, defaming Bengal and the towering icons who shaped our civilisation.  
“बंगाल में कोई प्रभाव पैदा करने में असफल होने के बाद, भाजपा अब अपनी **सबसे गंदी रणनीति** अपना रही है—बंगाल और उन महान व्यक्तित्वों को बदनाम करना, जिन्होंने हमारी सभ्यता को आकार दिया।
- From **Rabindranath Tagore** to **Swami Vivekananda** to **Ishwar Chandra Vidyasagar**, no legend has been spared from the BJP's **relentless insults**,” the Trinamool said in an X post.  
**रवींद्रनाथ टैगोर** से लेकर **स्वामी विवेकानंद** और **ईश्वर चंद्र विद्यासागर** तक, भाजपा की **लगातार अपमानजनक टिप्पणियों** से कोई भी महानायक नहीं बचा है,” तृणमूल ने X पोस्ट में कहा।

### ‘Communal mindset’ ‘सांप्रदायिक मानसिकता’

- Madhya Pradesh **Leader of the Opposition** and Congress MLA **Umang Singhar** termed the remarks “shameful” and alleged that they were a **BJP conspiracy** to bring those who serve their ideology to the centre of history and to defame the **real nation-builders**.  
मध्य प्रदेश के **विपक्ष के नेता** और कांग्रेस विधायक **उमंग सिंघर** ने इन टिप्पणियों को “शर्मनाक” बताया और आरोप लगाया कि यह एक **भाजपा साजिश** है, जिसमें वे अपने विचारों की सेवा करने वालों को इतिहास के केंद्र में लाना चाहते हैं और **वास्तविक राष्ट्र-निर्माताओं** को बदनाम करना चाहते हैं।”
- “Even though the Minister has apologised after the public's outrage, the question is - Can a **communal mindset** change with just one apology?  
“हालाँकि जनआक्रोश के बाद मंत्री ने माफी मांग ली है, लेकिन सवाल यह है—क्या एक **सांप्रदायिक मानसिकता** सिर्फ एक माफी से बदल सकती है?”
- Is a mindset that **distorts and twists history** acceptable while holding a ministerial position?” Mr. Singhar asked X.  
क्या इतिहास को **तोड़-मरोड़कर पेश करने वाली मानसिकता** मंत्री पद पर रहते हुए स्वीकार्य है?” श्री सिंघर ने X पर पूछा।
- **West Bengal BJP president Samik Bhattacharya** said he would raise the issue with the party's **central leadership** but added that the Trinamool was blowing the issue out of proportion.  
**पश्चिम बंगाल भाजपा अध्यक्ष समिक भट्टाचार्य** ने कहा कि वह इस मुद्दे को पार्टी की **केंद्रीय नेतृत्व** के सामने उठाएँगे, लेकिन यह भी जोड़ा कि तृणमूल इस मुद्दे को बढ़ा-चढ़ाकर पेश कर रही है।



## Stone nagaswaram at Tamil Nadu temple to hog the limelight at consecration ritual

GS I: A&C

**B. Kolappan**  
KUMBakonam

The *kumbabishekam* (consecration) of the Adikumbeshwarar Temple in Kumbakonam, scheduled for December 1, will draw attention to the unique stone nagaswaram preserved in the temple.

The instrument was last played years ago during the Ayudha Puja. It will be played again on November 28 as part of rituals leading up to the *kumbabishekam*.

"It is a timiri-type nagaswaram with six holes, and we use the 'seevali' made for a timiri nagaswaram. The instrument has its limitations. It also demands enormous energy on the part of the player," said Swaminathan, former nagaswaram artiste of the Adikumbeshwarar Temple.

The pipe of the instrument, known as the 'uzhau', is made of stone. The front portion, called the 'anusu', acts as volume enhancer, and the end portion is where the reed is fitted. These parts are made of brass.

### Story on instrument

Although there are no records on when the instrument was made, the Kumbakonam-based writer, Ki.Ra. Gopalan, has written a short story, *Kal Naayanam*, an imaginative narrative about its creation.

The story begins with the Navaratri celebrations in the temple. Among the dolls adorning the Golu is a stone nagaswaram discovered in a room that had remained locked for many years. "If there was a sculptor capable of making a nagaswaram, there would certainly be a nagaswaram player who could handle it," says Natarajan, a character in the story.

As they admire the instrument, another character, Vaidhi, begins to narrate the tale: Once, there



The timiri-type nagaswaram with six holes.

lived in Kumbakonam a sculptor named Nagesan and his close friend Muthukumar, an accomplished nagaswaram player. Nagesan's sister Anjana was in love with Muthukumar. When Muthukumar wondered whether Nagesan could chisel a nagaswaram out of stone, the sculptor said he could, if someone was ready to play it. "Are you ready to give up your vocation if I manage to play it? If I fail, I will never touch the nagaswaram again," said Muthukumar.

Nagesan instead declared that if Muthukumar could not play the stone nagaswaram, he would not give his sister in marriage. This shocked Anjana, who even secretly attempted to break the instrument but failed.

### Contest result

After the nagaswaram was completed, a date was fixed for its playing. Muthukumar picked up the instrument effortlessly and played it as though he had been doing it for years.

As everyone looked on in amazement, Muthukumar explained that he had begun practising by holding an iron pipe heavier than the stone nagaswaram and "playing" it in his mind, imagining it as the real instrument. "It was difficult for the first two or three days, but it became normal thereafter," he told the audience.

about its creation.

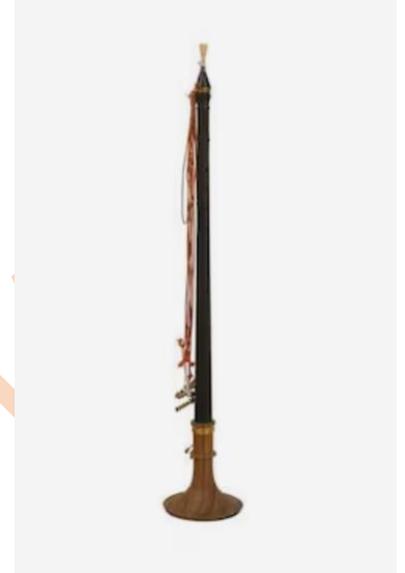
यद्यपि इस वाद्ययंत्र के निर्माण का कोई रिकॉर्ड उपलब्ध नहीं है, कुंभकोणम के लेखक की.रा. गोपालन ने इसकी रचना पर आधारित एक कल्पनात्मक कहानी 'कल नायनम' लिखी है।

- The story begins with the **Navaratri celebrations** in the temple. कहानी की शुरुआत मंदिर में होने वाले **नवरात्रि उत्सव** से होती है।

**Stone nagaswaram at Tamil Nadu temple to hog the limelight at consecration ritual**

**तमिलनाडु मंदिर में स्टोन नागस्वरम अभिषेक अनुष्ठान में आकर्षण का केंद्र बनेगा**

- The **kumbabishekam** (consecration) of the **Adikumbeshwarar Temple** in **Kumbakonam**, scheduled for December 1, will draw attention to the **unique stone nagaswaram** preserved in the temple. कुंभकोणम के आदिकुंबेश्वरर मंदिर का 1 दिसंबर को निर्धारित कुम्बाभिषेक (अभिषेक) मंदिर में संरक्षित अद्वितीय स्टोन नागस्वरम पर ध्यान आकर्षित करेगा।
- The instrument was last played years ago during the **Ayudha Puja**. यह वाद्ययंत्र कई वर्ष पहले **आयुध पूजा** के दौरान अंतिम बार बजाया गया था।
- It will be played again on **November 28** as part of rituals leading up to the **kumbabishekam**. यह **28 नवंबर** को कुम्बाभिषेक से पहले होने वाले अनुष्ठानों के हिस्से के रूप में फिर से बजाया जाएगा।



- "It is a **timiri-type nagaswaram** with six holes, and we use the '**seevali**' made for a timiri nagaswaram. "यह छह छेदों वाला एक **तिमिरी-प्रकार नागस्वरम** है, और हम इसके लिए तैयार किया गया '**सीवाली**' प्रयोग करते हैं।"

- The instrument has its limitations. इस वाद्ययंत्र की अपनी सीमाएँ हैं।

- It also demands **enormous energy** on the part of the player," said **Swaminathan**, former nagaswaram artiste of the Adikumbeshwarar Temple. इसे बजाने वाले से **अपार ऊर्जा** की भी आवश्यकता होती है," आदिकुंबेश्वरर मंदिर के पूर्व नागस्वरम कलाकार **स्वामीनाथन** ने कहा।

- The pipe of the instrument, known as the '**uzhau**', is made of **stone**. वाद्ययंत्र की पाइप, जिसे '**उझाउ**' कहा जाता है, **पत्थर** की बनी है।

- The front portion, called the '**anusu**', acts as **volume enhancer**, and the end portion is where the **reed** is fitted. सामने का हिस्सा, जिसे '**अनुसु**' कहा जाता है, **वाँल्यूम बढ़ाने** का काम करता है, और अंतिम हिस्से में **रीड** लगाई जाती है।

- These parts are made of **brass**. ये भाग **पीतल** के बने होते हैं।

### Story on instrument वाद्ययंत्र पर कहानी

- Although there are no records on when the instrument was made, the **Kumbakonam-based writer, Ki.Ra. Gopalan**, has written a short story, **Kal Naayanam**, an imaginative narrative



- Among the dolls adorning the **Golu** is a stone nagaswaram discovered in a room that had remained locked for many years.  
गोलू की सजावट में एक स्टोन नागस्वरम भी है, जो कई वर्षों से बंद पड़े एक कमरे में पाया गया था।
- “If there was a **sculptor** capable of making a nagaswaram, there would certainly be a **nagaswaram player** who could handle it,” says **Natarajan**, a character in the story.  
“यदि कोई मूर्तिकार नागस्वरम बना सकता है, तो निश्चित रूप से उसे बजाने वाला एक नागस्वरम वादक भी होगा,” कहानी के एक पात्र **नटराजन** कहते हैं।
- As they admire the instrument, another character, **Vaidhi**, begins to narrate the tale: जैसे ही वे वाद्ययंत्र की प्रशंसा करते हैं, एक अन्य पात्र **वैधि** कहानी सुनाना शुरू करता है:
- Once, there lived in **Kumbakonam** a sculptor named **Nagesan** and his close friend **Muthukumaran**, an accomplished nagaswaram player.  
एक समय **कुम्भकोणम** में **नागेशन** नामक एक मूर्तिकार और उसका करीबी मित्र **मुथुकुमारन**, जो एक कुशल नागस्वरम वादक था, रहते थे।
- Nagesan’s sister **Anjana** was in love with **Muthukumaran**.  
नागेशन की बहन **अंजना** को **मुथुकुमारन** से प्रेम था।
- When Muthukumaran wondered whether Nagesan could chisel a nagaswaram out of stone, the sculptor said he could, if someone was ready to play it.  
जब मुथुकुमारन ने सोचा कि क्या नागेशन पत्थर से नागस्वरम तराश सकता है, तो मूर्तिकार ने कहा कि वह ऐसा कर सकता है, यदि कोई उसे बजाने के लिए तैयार हो।
- “Are you ready to give up your vacation if I manage to play it? If I fail, I will never touch the nagaswaram again,” said Muthukumaran.  
“क्या तुम अपना पेशा छोड़ने के लिए तैयार हो, यदि मैं इसे बजा दूँ? यदि मैं असफल हुआ, तो मैं फिर कभी नागस्वरम नहीं छुँऊँगा,” मुथुकुमारन ने कहा।
- Nagesan instead declared that if Muthukumaran could not play the stone nagaswaram, he would not give his sister in marriage.  
इसके बजाय नागेशन ने घोषणा की कि यदि मुथुकुमारन स्टोन नागस्वरम नहीं बजा पाया, तो वह अपनी बहन का विवाह उससे नहीं करेगा।
- This shocked **Anjana**, who even secretly attempted to break the instrument but failed.  
यह सुनकर **अंजना** स्तब्ध रह गई, और उसने गुप्त रूप से वाद्ययंत्र को तोड़ने की भी कोशिश की, लेकिन असफल रही।

### Contest result

#### प्रतियोगिता परिणाम

- After the nagaswaram was completed, a date was fixed for its playing.  
नागस्वरम पूरा होने के बाद, इसे बजाने की एक तिथि तय की गई।
- **Muthukumaran** picked up the instrument effortlessly and played it as though he had been doing it for years.  
**मुथुकुमारन** ने वाद्ययंत्र को सहजता से उठाया और ऐसे बजाया जैसे वह इसे वर्षों से बजा रहा हो।
- As everyone looked on in amazement, Muthukumaran explained that he had begun practising by holding an **iron pipe** heavier than the stone nagaswaram and “playing” it in his mind, imagining it as the real instrument.  
जब सब आश्चर्य से देख रहे थे, मुथुकुमारन ने बताया कि उसने अभ्यास शुरू किया था **लोहे की पाइप**, जो स्टोन नागस्वरम से भारी थी, को पकड़कर और मन में उसे वास्तविक वाद्ययंत्र मानकर “बजाने” से।
- “It was difficult for the first two or three days, but it became normal thereafter,” he told the audience.  
“पहले दो-तीन दिन कठिन थे, लेकिन उसके बाद सब सामान्य हो गया,” उसने दर्शकों से कहा।



## The legal hoodwinking of Adivasis

CS In Society

Last month, when the Chhattisgarh High Court upheld the cancellation of community forest rights (CFR) of Ghatbarra village in Chhattisgarh's Hasdeo Arand forests, it did not just close a legal case; it also closed the door on justice. For the residents of Ghatbarra, mostly Adivasis, whose forests were taken over and felled for the Parsa East and Kanta Basan coal mine, the ruling added insult to injury. In the nine years since they approached the court seeking restoration of their rights, the damage was already done: while the matter remained sub judice, mining on their community forest lands was fast-tracked and lakhs of trees were felled. Now, rather than restoring their rights, the court dismissed the original recognition of rights as a "mistake" and suggested that any rights claims could be compensated in money.

To the Adivasis, however, the forest is not a property claim but a living relationship. The judgment is not only a legal setback but also a moral one, revealing how the architecture of forest governance continues to serve capitalist developmental logics that the Forest Rights Act (FRA), 2006, was meant to challenge.

### A long history of legal tussles

The proposal to divert the forest land for mining was originally rejected by the Environment Ministry's Forest Advisory Committee (FAC) in 2011, noting the area's ecological richness. An FAC subcommittee also reported that forest rights were not settled and that the affected villagers lacked basic awareness of the law. Since 2009, following the FRA's enactment, settlement of forest rights and informed prior consent of affected Gram Sabhas have been a legal precondition for forest diversion that is done under the Forest Conservation Act, 1980. Despite this, the then Environment Minister, Jairam Ramesh, allowed the project to proceed, arguing that developmental imperatives outweighed ecological



**Gautam Aredath**  
Policy analyst at the Ashoka Trust for Research in Ecology and the Environment. Views are personal



**Sharachchandra Lele**  
Distinguished fellow at the Ashoka Trust for Research in Ecology and the Environment. Views are personal

considerations, which could be managed. The forest clearance was granted in 2012, despite villagers' pleas and protests.

In 2014, the National Green Tribunal set aside this clearance, directing the Ministry to reconsider the proposal and to halt mining. But on appeal by the mine leaseholder, shortly afterwards, the Supreme Court allowed the mine to resume, without interfering with the direction to reconsider the clearance. Despite the apparent oddity, this position continued until the appeal was withdrawn in 2023. The FAC reconsidered the matter in 2018. By then, the mine was already operational and the FAC merely noted it as a fait accompli.

Meanwhile, in 2013, the Ghatbarra Gram Sabha's CFRs were formally (albeit partially) recognised under the FRA. But once the community began asserting those rights against mining, the District Level Committee (DLC) headed by the District Collector unilaterally revoked their title in 2016, prompting the villagers to approach the High Court.

### Finding and its failings

After nine years, the High Court has held that Ghatbarra's CFRs were void ab initio because the land had already been diverted for mining. This reasoning ignored Section 4(7) of the FRA, which states that forest rights are recognised "free of all encumbrances." If a mining lease is an encumbrance on a community's customary forest, it is the government's duty to remove it before recognising or restoring rights – not the other way around.

Recognising CFRs does not mean mines will always be blocked, because Gram Sabhas can still give their consent. The difference is that recognition empowers a Gram Sabha to make its own decision and, if necessary, determine the appropriate compensation. By contrast, the court's suggestion that any claims

could be compensated, while refusing to uphold recognised rights, is a judicial shrug rather than a binding direction.

The judgment also relied on technicalities to sidestep a central question: whether the forest clearance complied with the legal requirements to settle forest rights and obtain Gram Sabha consent. Ghatbarra Gram Sabha's recorded opposition preceding the clearance and the subsequent CFR recognition suggest otherwise. Under Rule 12(B) of the FRA rules, it is the DLC's obligation to ensure that CFRs are recognised and to record reasons if they are not. Yet the court faulted the petitioners for failing to prove that the clearance violated the FRA. Without the DLC's reasons to explain the non-existence of CFRs, it is likely that any evidence of FRA compliance used to grant clearance was flawed. This is not pure conjecture, because Gram Sabha consents were found to be forged in the neighbouring Parsa coal block.

The court's rejection of the petitioners' locus standi is also problematic. CFRs are rights of the entire village community in the name of its Gram Sabha, and the petitioner villagers were clearly aggrieved by the cancellation. The court also faulted them for not challenging the original diversion order, ignoring that the NGT had already set it aside and that the Supreme Court's pending proceedings had effectively frozen their legal options.

The Supreme Court's Niyamgiri verdict (2013) was a beacon for the constitutional promise of Adivasi self-determination over their customary forests. What has unfolded in Hasdeo contradicts that principle. The verdict is less an act of justice and more an act of administrative legitimisation. It shows how the language of legality can be turned against justice and how institutions, even the courts, can ritualise procedure while perpetuating dispossession. Unless the FRA is enforced, justice will remain as empty as the mine pits in Hasdeo.

The Supreme Court's Niyamgiri verdict was a beacon for the constitutional promise of Adivasi self-determination. What has unfolded in Hasdeo contradicts that principle

## The legal hoodwinking of Adivasis आदिवासियों की कानूनी चालबाज़ी

- Last month, when the Chhattisgarh High Court upheld the cancellation of **community forest rights (CFR) of Ghatbarra village** in Chhattisgarh's **Hasdeo Arand forests**, it did not just close a legal case; it also closed the door on justice. पिछले महीने, जब छत्तीसगढ़ उच्च न्यायालय ने छत्तीसगढ़ के हसदेव अरण्य जंगलों में घाटबर्रा गांव के समुदायिक वन अधिकारों (CFR) की रद्दीकरण को बरकरार रखा, तो यह केवल एक कानूनी मामले को बंद नहीं किया; इसने न्याय के द्वार को भी बंद कर दिया।
- For the residents of **Ghatbarra**, mostly **Adivasis**, whose forests were taken over and felled for the **Parsa East and Kanta Basan coal mine**, the ruling added **insult to injury**. घाटबर्रा के निवासियों के लिए, ज्यादातर **आदिवासी**, जिनके जंगल **पारसा पूर्व और कांटा बासन कोयला खदान** के लिए कब्जे में लिए गए और काटे गए, यह फैसला **चोट पर अपमान** जोड़ दिया।
- In the **nine years** since they approached the court seeking restoration of their rights, the damage was already done: while the matter remained **sub judice**, mining on their **community forest lands** was fast-tracked and **lakhs of trees** were felled.
- **नौ वर्षों** में जब से उन्होंने अपने अधिकारों की बहाली के लिए अदालत का दरवाजा खटखटाया, क्षति पहले ही हो चुकी थी: जब मामला **सब ज्यूडिस** बना रहा, उनके **समुदायिक वन भूमि** पर खनन को तेजी से आगे बढ़ाया गया और **लाखों पेड़** काटे गए।



- Now, rather than restoring their rights, the court dismissed the original recognition of rights as a “mistake” and suggested that any rights claims could be compensated in money. अब, उनके अधिकारों को बहाल करने के बजाय, अदालत ने मूल अधिकारों की मान्यता को “गलती” करार दिया और सुझाव दिया कि किसी भी अधिकार दावों को धन से मुआवजा दिया जा सकता है।
- To the Adivasis, however, the forest is **not a property claim but a living relationship**. हालांकि, आदिवासियों के लिए, जंगल एक संपत्ति दावा नहीं बल्कि एक जीवंत संबंध है।
- The judgment is not only a **legal setback** but also a **moral one**, revealing how the **architecture of forest governance** continues to serve **capitalist developmental logics** that the **Forest Rights Act (FRA), 2006**, was meant to challenge. यह फैसला न केवल एक कानूनी झटका है बल्कि एक नैतिक भी, जो प्रकट करता है कि वन शासन की संरचना पूंजीवादी विकासवादी तर्कों की सेवा कैसे जारी रखती है जिन्हें वन अधिकार अधिनियम (FRA), 2006 को चुनौती देने के लिए बनाया गया था।

## A long history of legal tussles

### कानूनी विवादों का लंबा इतिहास

- The **proposal to divert the forest land for mining** was originally rejected by the **Environment Ministry's Forest Advisory Committee (FAC) in 2011**, noting the area's **ecological richness**. खनन के लिए वन भूमि को मोड़ने का प्रस्ताव मूल रूप से पर्यावरण मंत्रालय के वन सलाहकार समिति (FAC) द्वारा 2011 में अस्वीकार कर दिया गया था, क्षेत्र की पारिस्थितिक समृद्धि का उल्लेख करते हुए।
- An **FAC subcommittee** also reported that **forest rights** were not settled and that the affected villagers lacked **basic awareness** of the law. एक **FAC उपसमिति** ने भी रिपोर्ट किया कि वन अधिकार तय नहीं हुए थे और प्रभावित ग्रामीणों को कानून की मूल जागरूकता की कमी थी।
- **Since 2009, following the FRA's enactment, settlement of forest rights and informed prior consent of affected Gram Sabhas** have been a legal precondition for **forest diversion that is done under the Forest Conservation Act, 1980**.
- **2009** से, **FRA** के अधिनियमन के बाद, **वन अधिकारों** का निपटारा और प्रभावित **ग्राम सभाओं** की सूचित पूर्व सहमतिवन संरक्षण अधिनियम, 1980 के तहत किए जाने वाले **वन मोड़ने** के लिए एक कानूनी पूर्वशर्त रही है।
- Despite this, the then **Environment Minister, Jairam Ramesh**, allowed the project to proceed, arguing that **developmental imperatives** outweighed **ecological considerations**, which could be managed.
- इसके बावजूद, तत्कालीन पर्यावरण मंत्री, **जयराम रमेश**, ने परियोजना को आगे बढ़ने की अनुमति दी, तर्क देते हुए कि **विकासवादी अनिवार्यताएं पारिस्थितिक विचारों** पर भारी पड़ती हैं, जिन्हें प्रबंधित किया जा सकता है।
- The **forest clearance** was granted in **2012**, despite villagers' pleas and protests.
- **वन मंजूरी 2012** में दी गई, ग्रामीणों की अपीलों और विरोधों के बावजूद।
- **In 2014, the National Green Tribunal set aside this clearance, directing the Ministry to reconsider the proposal and to halt mining.**
- **2014** में, **राष्ट्रीय हरित अधिकरण** ने इस मंजूरी को रद्द कर दिया, **मंत्रालय** को प्रस्ताव पर पुनर्विचार करने और खनन रोकने का निर्देश दिया।
- But on appeal by the **mine leaseholder**, shortly afterwards, the **Supreme Court** allowed the mine to resume, without interfering with the direction to reconsider the clearance.
- लेकिन **खदान पट्टाधारक** की अपील पर, थोड़ी ही देर बाद, **सर्वोच्च न्यायालय** ने खदान को फिर से शुरू करने की अनुमति दी, मंजूरी पर पुनर्विचार के निर्देश में हस्तक्षेप किए बिना।
- Despite the apparent oddity, this position continued until the appeal was withdrawn in **2023**. स्पष्ट विचित्रता के बावजूद, यह स्थिति **2023** में अपील वापस लिए जाने तक जारी रही।
- The **FAC** reconsidered the matter in **2018**.
- **FAC** ने मामले पर **2018** में पुनर्विचार किया।
- By then, the mine was already **operational** and the **FAC** merely noted it as a **fait accompli**. तब तक, खदान पहले ही सक्रिय हो चुकी थी और **FAC** ने इसे केवल एक **fait accompli** के रूप में नोट किया।



- Meanwhile, in 2013, the Ghatbarra Gram Sabha's CFRs were formally (albeit partially) recognised under the FRA. इस बीच, 2013 में, घाटबर्रा ग्राम सभा के CFR को FRA के तहत औपचारिक रूप से (हालांकि आंशिक रूप से) मान्यता दी गई।
- But once the community began asserting those rights against mining, the District Level Committee (DLC) headed by the District Collector unilaterally revoked their title in 2016, prompting the villagers to approach the High Court.
- लेकिन एक बार जब समुदाय ने खनन के खिलाफ उन अधिकारों का दावा करना शुरू किया, तो जिला कलेक्टर के नेतृत्व वाली जिला स्तरीय समिति (DLC) ने 2016 में एकतरफा रूप से उनका शीर्षक रद्द कर दिया, जिससे ग्रामीणों को उच्च न्यायालय का रुख करने के लिए प्रेरित किया।

## Finding and its failings

### निर्णय और इसकी कमियाँ

- After nine years, the High Court has held that Ghatbarra's CFRs were void ab initio because the land had already been diverted for mining.
- नौ वर्षों के बाद, उच्च न्यायालय ने माना कि घाटबर्रा के CFR शून्य अभि इंटियो थे क्योंकि भूमि पहले ही खनन के लिए मोड़ दी गई थी।
- This reasoning ignored Section 4(7) of the FRA, which states that forest rights are recognised "free of all encumbrances."
- यह तर्क FRA की धारा 4(7) को नजरअंदाज कर गया, जो कहती है कि वन अधिकार "सभी बंधनों से मुक्त" मान्यता प्राप्त होते हैं।
- If a mining lease is an encumbrance on a community's customary forest, it is the government's duty to remove it before recognising or restoring rights — not the other way around.
- यदि कोई खनन पट्टा एक समुदाय के प्रथागत वन पर बंधन है, तो सरकार का कर्तव्य है कि वह अधिकारों को मान्यता देने या बहाल करने से पहले इसे हटाए — उल्टा नहीं।
- Recognising CFRs does not mean mines will always be blocked, because Gram Sabhas can still give their consent. CFR को मान्यता देना यह नहीं मतलब कि खदानें हमेशा अवरुद्ध रहेंगी, क्योंकि ग्राम सभाएं अभी भी अपनी सहमति दे सकती हैं।
- The difference is that recognition empowers a Gram Sabha to make its own decision and, if necessary, determine the appropriate compensation. अंतर यह है कि मान्यता एक ग्राम सभा को अपना निर्णय लेने का सशक्तिकरण देती है और, यदि आवश्यक हो, तो उचित मुआवजा निर्धारित करने का।
- By contrast, the court's suggestion that any claims could be compensated, while refusing to uphold recognised rights, is a judicial shrug rather than a binding direction. इसके विपरीत, अदालत का सुझाव कि किसी भी दावों को मुआवजा दिया जा सकता है, जबकि मान्यता प्राप्त अधिकारों को बरकरार रखने से इनकार करते हुए, एक न्यायिक कंधा उचकाना है न कि एक बाध्यकारी निर्देश।
- The judgment also relied on technicalities to sidestep a central question: whether the forest clearance complied with the legal requirements to settle forest rights and obtain Gram Sabha consent. फैसले ने तकनीकीताओं पर भी भरोसा किया एक केंद्रीय प्रश्न को टालने के लिए: क्या वन मंजूरीवन अधिकारों को तय करने और ग्राम सभा सहमति प्राप्त करने की कानूनी आवश्यकताओं का पालन करती थी।
- Ghatbarra Gram Sabha's recorded opposition preceding the clearance and the subsequent CFR recognition suggest otherwise. घाटबर्रा ग्राम सभा की मंजूरी से पहले दर्ज विरोध और उसके बाद की CFR मान्यता कुछ और सुझाती है।
- Under Rule 12(B) of the FRA rules, it is the DLC's obligation to ensure that CFRs are recognised and to record reasons if they are not. FRA नियमों की नियम 12(B) के तहत, यह DLC का दायित्व है कि यह सुनिश्चित करे कि CFR मान्यता प्राप्त हों और यदि नहीं तो कारण दर्ज करे।
- Yet the court faulted the petitioners for failing to prove that the clearance violated the FRA. फिर भी अदालत ने याचिकाकर्ताओं को दोषी ठहराया कि वे साबित करने में विफल रहे कि मंजूरी FRA का उल्लंघन करती थी।



- Without the **DLC**'s reasons to explain the non-existence of **CFRs**, it is likely that any evidence of **FRA compliance** used to grant clearance was **flawed**. **DLC** के कारणों के बिना **CFR** की अनुपस्थिति को समझाने के लिए, यह संभावना है कि मंजूरी देने के लिए उपयोग की गई किसी भी **FRA अनुपालन** की साक्ष्य **दोषपूर्ण** थी।
- This is not pure conjecture, because **Gram Sabha consents** were found to be **forged** in the neighbouring **Parsa coal block**. यह शुद्ध अनुमान नहीं है, क्योंकि पड़ोसी **पारसा कोयला ब्लॉक** में **ग्राम सभा सहमति** को **जाली** पाए गए थे।
- The court's rejection of the petitioners' **locus standi** is also problematic. अदालत का याचिकाकर्ताओं के **लोकस स्टैंडी** को अस्वीकार करना भी समस्याग्रस्त है।
- **CFRs** are rights of the entire **village community** in the name of its **Gram Sabha**, and the petitioner villagers were clearly **aggrieved** by the cancellation. **CFR** पूरे गांव **समुदाय** के अधिकार हैं इसके **ग्राम सभा** के नाम पर, और याचिकाकर्ता ग्रामीण स्पष्ट रूप से रद्दीकरण से **पीड़ित** थे।
- The court also faulted them for not challenging the original **diversion order**, ignoring that the **NGT** had already set it aside and that the **Supreme Court**'s pending proceedings had effectively **frozen** their legal options. अदालत ने उन्हें मूल **मोड़ आदेश** को चुनौती न देने के लिए भी दोषी ठहराया, नजरअंदाज करते हुए कि **NGT** ने पहले ही इसे रद्द कर दिया था और **सर्वोच्च न्यायालय** की लंबित कार्यवाही ने प्रभावी रूप से उनकी कानूनी विकल्पों को **जमाया** हुआ था।
- The **Supreme Court's Niyamgiri verdict (2013)** was a **beacon for the constitutional promise of Adivasi self-determination over their customary forests**.
- **सर्वोच्च न्यायालय का नियमगिरि फैसला (2013)** आदिवासी स्व-निर्धारण के संवैधानिक वादे के लिए एक प्रदीप था उनके **प्रथागत वनों** पर।
- What has unfolded in **Hasdeo contradicts** that principle.
- **हसदेव** में जो कुछ सामने आया है वह उस सिद्धांत का विरोध करता है।
- The verdict is less an act of **justice** and more an act of **administrative legitimization**. यह फैसला **न्याय** का कार्य कम और **प्रशासनिक वैधिकरण** का कार्य अधिक है।
- It shows how the language of **legality** can be turned against **justice** and how institutions, even the **courts**, can ritualise **procedure** while perpetuating **dispossession**. यह दिखाता है कि **कानूनीयता** की भाषा **न्याय** के खिलाफ कैसे मोड़ी जा सकती है और संस्थाएं, यहां तक कि **अदालतें**, **प्रक्रिया** को रस्मी कैसे बना सकती हैं जबकि **विस्थापन** को बनाए रखते हुए।
- Unless the **FRA** is enforced, **justice** will remain as empty as the **mine pits** in **Hasdeo**. जब तक **FRA** को लागू न किया जाए, **न्यायहसदेव** में **खदान गड्ढों** जितना खाली बना रहेगा।

<b>Geography</b>	<b>17/11/2025</b>
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## Maduro decries joint exercises by U.S. and Trinidad and Tobago

GS 1: Geography: Mapping

Agence France-Presse  
CARACAS

Venezuelan President Nicolas Maduro on Saturday slammed new joint military exercises by the United States and its ally Trinidad and Tobago as "irresponsible," with Washington increasing its presence in the Caribbean.

Caracas claims recent U.S. military activity in the region — which Washington says is directed against drug gangs — is really a ploy to overthrow leftist leader Maduro. This is the second joint training exercise carried out by the U.S. and Trinidad and Tobago in less than a month.

"The government of Tri-



Nicolas Maduro

nidad and Tobago has once again announced irresponsible exercises, lending its waters off the coast of Sucre state for military exercises that are intended to be threatening to a republic like Venezuela, which does not allow itself to be threatened by anyone," Mr. Maduro said.

## Maduro decries joint exercises by U.S. and Trinidad and Tobago

मद्रो ने अमेरिका और त्रिनिदाद एवं टोबैगो के संयुक्त अभ्यासों की निंदा की

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• Venezuelan President **Nicolas Maduro** on Saturday slammed new joint military exercises by the **United States** and its ally **Trinidad and Tobago** as "irresponsible," with Washington increasing its presence in the Caribbean.

वेनेजुएला के राष्ट्रपति **निकोलास मद्रो** ने शनिवार को **संयुक्त राज्य अमेरिका** और उसके सहयोगी **त्रिनिदाद और टोबैगो** द्वारा किए गए नए संयुक्त सैन्य अभ्यासों को "गैर-जिम्मेदाराना" बताते हुए निंदा की, जबकि वॉशिंगटन कैरेबियाई क्षेत्र में अपनी उपस्थिति बढ़ा रहा है।

• Caracas claims recent U.S. military activity in the region — which Washington says is directed against drug gangs — is really a ploy to overthrow leftist leader Maduro.

कराकस का दावा है कि क्षेत्र में हाल की अमेरिकी सैन्य गतिविधि — जिसे वॉशिंगटन ड्रग गैंग्स के खिलाफ बताता है — वास्तव में वामपंथी नेता मद्रो को हटाने की साजिश है।

• This is the second joint training exercise carried out by the U.S. and Trinidad and Tobago in less than a month.

यह एक महीने से भी कम समय में अमेरिका और त्रिनिदाद एवं टोबैगो द्वारा किया गया दूसरा संयुक्त प्रशिक्षण अभ्यास है।

• "The government of Trinidad and Tobago has once again announced irresponsible exercises, lending its waters off the coast of Sucre state for military exercises that are intended to be threatening to a republic like Venezuela, which does not allow itself to be threatened by anyone," Mr. Maduro said.

श्री मद्रो ने कहा, "त्रिनिदाद और टोबैगो की सरकार ने एक बार फिर गैर-जिम्मेदाराना अभ्यासों की घोषणा की है, जिसने **सुक्रे राज्य** के तट के पास अपने जलक्षेत्र को ऐसे सैन्य अभ्यासों के लिए उपलब्ध कराया है, जो वेनेजुएला जैसी गणराज्य के लिए धमकीपूर्ण हैं — और वेनेजुएला किसी से धमकाया जाना स्वीकार नहीं करता।"



# China Coast Guard ships sail through Japan-administered Senkaku Islands

**GS I: Geography: Mapping**

**Reuters**

BEIJING

A China Coast Guard ship formation passed through the waters of the Senkaku Islands on Sunday on a "rights enforcement patrol", the China Coast Guard said in a statement, as Beijing ramps up tensions with Japan over its Prime Minister's remarks on Taiwan.

A diplomatic spat between China and Japan has intensified since Japanese Prime Minister Sanae Takaichi told Parliament on November 7 that a hypothetical Chinese attack on democratically-ruled Taiwan could trigger a military response from Tokyo.

The remarks sparked an



China says it patrolled the Diaoyu (Senkaku) Islands' territorial waters "in a lawful mission" to defend national sovereignty. AP

angry response from Beijing, which has signalled that it expects Ms. Takaichi to retract them in some fashion.

China claims Taiwan as its own territory and has not ruled out the use of force to take control of the

island. Taiwan's government rejects Beijing's sovereignty claims.

"China Coast Guard vessel 1307 formation conducted patrols within the territorial waters of the Diaoyu Islands. This was a lawful patrol operation

conducted by the China Coast Guard to uphold its rights and interests," the statement said.

China and Japan have repeatedly faced off around the Japan-administered islands, which Beijing calls Diaoyu and Tokyo calls the Senkaku.

The Japanese Embassy in Beijing did not immediately respond to a request for comment.

In Taiwan, the Defence Ministry said on Sunday morning it had detected 30 Chinese military aircraft operating around the island and seven navy ships over the past 24 hours. Late on Saturday, the ministry said China had been carrying out another "joint combat patrol".

## China Coast Guard ships sail through Japan-administered Senkaku Islands चीन कोस्ट गार्ड जहाज़ जापान-प्रशासित सेनकाकू द्वीपों से गुज़रे

- A China Coast Guard ship formation passed through the waters of the Senkaku Islands on Sunday on a "**rights enforcement patrol**", the China Coast Guard said in a statement, as Beijing ramps up tensions with Japan over its Prime Minister's remarks on **Taiwan**.

चीन कोस्ट गार्ड ने एक बयान में कहा कि रविवार को चीन कोस्ट गार्ड के जहाज़ों का एक समूह सेनकाकू द्वीपों के जलक्षेत्र से "**राइट्स एनफोर्समेंट पेट्रोल**" पर गुज़रा, क्योंकि ताइवान पर जापान के प्रधानमंत्री की टिप्पणी को लेकर बीजिंग और जापान के बीच तनाव बढ़ रहा है।



- A diplomatic spat between China and Japan has intensified since Japanese Prime Minister **Sanae Takaichi** told Parliament on November 7 that a **hypothetical Chinese attack on democratically-ruled Taiwan could trigger a military response from Tokyo**.

7 नवंबर को जापानी प्रधानमंत्री **साने ताकाइची** द्वारा संसद में यह कहे जाने के बाद कि **लोकतांत्रिक ताइवान** पर चीन के काल्पनिक हमले से टोक्यो की **सैनिक प्रतिक्रिया** हो सकती है, चीन और जापान के बीच राजनयिक विवाद तीव्र हो गया है।

- The remarks sparked an angry response from Beijing, which has signalled that it expects Ms. Takaichi to **retract** them in some fashion.  
इस टिप्पणी ने बीजिंग की कड़ी प्रतिक्रिया को जन्म दिया, जिसने संकेत दिया है कि वह उम्मीद करता है कि सुश्री ताकाइची इसे किसी न किसी रूप में **वापस लें**।
- China claims **Taiwan** as its own territory and has not ruled out the **use of force** to take control of the island. Taiwan's government rejects Beijing's **sovereignty claims**.  
चीन **ताइवान** को अपना क्षेत्र मानता है और द्वीप पर नियंत्रण के लिए **बल प्रयोग** को नकारा नहीं है। ताइवान की सरकार बीजिंग के **संप्रभुता दावों** को खारिज करती है।
- "**China Coast Guard vessel 1307 formation** conducted patrols within the territorial waters of the **Diaoyu Islands**. This was a lawful patrol operation conducted by the



China Coast Guard to uphold its **rights and interests**,” the statement said.

बयान में कहा गया, "चीन कोस्ट गार्ड पोत 1307 समूह ने **दियाओयू द्वीपों** के प्रादेशिक जलक्षेत्र में गश्त की। यह चीन कोस्ट गार्ड द्वारा अपने **अधिकारों और हितों** की रक्षा के लिए की गई एक वैध गश्ती कार्रवाई थी।"

- China and Japan have repeatedly faced off around the Japan-administered islands, which **Beijing calls Diaoyu and Tokyo calls the Senkaku**.  
चीन और जापान अक्सर इन जापान-प्रशासित द्वीपों को लेकर आमने-सामने होते रहे हैं, जिन्हें बीजिंग **दियाओयू** और टोक्यो **सेनकाकू** कहता है।
- The Japanese Embassy in Beijing did not immediately respond to a request for comment.  
बीजिंग में जापानी दूतावास ने टिप्पणी के अनुरोध का तुरंत जवाब नहीं दिया।
- In Taiwan, the Defence Ministry said on Sunday morning it had detected **30 Chinese military aircraft** operating around the island and **seven navy ships** over the past 24 hours.  
ताइवान में, रक्षा मंत्रालय ने रविवार सुबह कहा कि उसने पिछले 24 घंटों में द्वीप के आसपास **30 चीनी सैन्य विमान** और **सात नौसैनिक जहाज़** संचालित होते हुए पाए।
- Late on Saturday, the ministry said China had been carrying out another **“joint combat patrol”**.  
मंत्रालय ने शनिवार देर रात कहा कि चीन एक और **"संयुक्त युद्ध गश्ती"** चला रहा था।

## Bridge collapse at Congo cobalt mine after rain kills over 30 informal miners

**GS I: Geography: Resource Distribution**

**Agence France-Presse**  
LUBUMBASHI

A bridge collapsed at a cobalt mine in southeast Democratic Republic of Congo killing at least 32 wildcat miners, a regional government official said on Sunday.

The bridge came down Saturday onto a flooded zone at the mine in Lualaba province, Roy Kaumba Mayonde, the provincial interior minister, told presspersons. He said 32 bodies had been recovered and more were being searched for.

The DRC produces more than 70% of the world supply of cobalt, which is essential for batteries used in electric cars, many laptop



Miners rushing across the makeshift bridge, built to get across a flooded trench, made it collapse, say authorities. FILE PHOTO

computers and mobile phones.

More than 2,00,000 people are estimated to be working in giant illegal cobalt mines in the giant central African country.

Local authorities said the bridge collapsed at the

Kalando mine, about 42 km southeast of the Lualaba provincial capital, Kolwezi.

“Despite a formal ban on access to the site because of the heavy rain and the risk of a landslide, wildcat miners forced their way

into the quarry,” said Mr. Mayonde.

He said that miners rushing across the makeshift bridge, built to get across a flooded trench, made it collapse.

A report by the SAE-MAPE government agency which monitors and helps mining cooperatives said that the presence of soldiers at the Kalando mine had caused a panic.

Accusations over the use of child labour, dangerous conditions and corruption have long cast a shadow over the DRC’s cobalt mining industry. The DRC’s mineral wealth has also been at the heart of a conflict that has ravaged the country’s east for more than three decades.

### Bridge collapse at Congo cobalt mine after rain kills over 30 informal miners कांगो कोबाल्ट खदान में पुल गिरने से बारिश के बाद 30 से अधिक अनौपचारिक खनिकों की मौत

- A bridge collapsed at a cobalt mine in southeast **Democratic Republic of Congo** killing at least **32 wildcat miners**, a regional government official said on Sunday.



दक्षिण-पूर्व डेमोक्रेटिक रिपब्लिक ऑफ कांगो की एक कोबाल्ट खदान में एक पुल ढह गया, जिससे कम से कम **32 अनौपचारिक खनिकों** की मौत हो गई, एक क्षेत्रीय सरकारी अधिकारी ने रविवार को कहा।



- The bridge came down Saturday onto a **flooded zone** at the mine in **Lualaba province**, Roy Kaumba Mayonde, the provincial interior minister, told presspersons. He said **32 bodies** had been recovered and more were being searched for.

प्रांतीय आंतरिक मंत्री रॉय कौम्बा मायोंडे ने पत्रकारों को बताया कि पुल शनिवार को **लुअलाबा प्रांत** की खदान के एक **बाढ़ग्रस्त क्षेत्र** पर गिर गया। उन्होंने कहा कि **32 शव** बरामद किए गए हैं और और लोगों की तलाश की जा रही है।

- The **DRC produces more than 70% of the world supply of cobalt, which is essential for batteries used in electric cars, many laptop computers and mobile phones.** **डीआरसी** दुनिया की कोबाल्ट आपूर्ति का **70%** से अधिक उत्पादन करता है, जो **इलेक्ट्रिक कारों, कई लैपटॉप कंप्यूटरों और मोबाइल फोन** में उपयोग होने वाली बैटरियों के लिए आवश्यक है।
- More than **2,00,000 people** are estimated to be working in giant **illegal cobalt mines** in the giant central African country.

इस विशाल मध्य अफ्रीकी देश में अनुमान है कि **2,00,000 से अधिक लोग** बड़े **अवैध कोबाल्ट खदानों** में काम कर रहे हैं।

- Local authorities said the bridge collapsed at the **Kalando mine**, about **42 km southeast** of the Lualaba provincial capital, **Kolwezi**. स्थानीय अधिकारियों ने कहा कि पुल **कालांडो खदान** में ढह गया, जो लुअलाबा प्रांतीय राजधानी **कोल्वेज़ी** से लगभग **42 किमी दक्षिण-पूर्व** में है।
- “Despite a **formal ban** on access to the site because of the **heavy rain** and the **risk of a landslide**, wildcat miners forced their way into the quarry,” said Mr. Mayonde. श्री मायोंडे ने कहा, “**भारी बारिश और भूस्खलन के खतरे** के कारण स्थल तक पहुंच पर **आधिकारिक प्रतिबंध** के बावजूद, अनौपचारिक खनिकों ने जबरदस्ती खदान में प्रवेश किया।”
- He said that miners rushing across the **makeshift bridge**, built to get across a **flooded trench**, made it collapse. उन्होंने कहा कि खनिक एक **अस्थायी पुल** से होकर, जो एक **बाढ़ग्रस्त खाई** को पार करने के लिए बनाया गया था, तेजी से गुज़र रहे थे, जिससे वह ढह गया।
- A report by the **SAEMAPE** government agency which monitors and helps mining cooperatives said that the presence of **soldiers** at the Kalando mine had caused a **panic**. खनन सहकारी समितियों की निगरानी और सहायता करने वाली सरकारी एजेंसी **SAEMAPE** की एक रिपोर्ट में कहा गया कि कालांडो खदान में **सैनिकों** की उपस्थिति ने **घबराहट** पैदा कर दी थी।

- Accusations over the use of **child labour, dangerous conditions** and **corruption** have long cast a shadow over the DRC’s cobalt mining industry. The DRC’s **mineral wealth** has also been at the heart of a **conflict** that has ravaged the country’s east for more than **three decades**.

**बाल श्रम, खतरनाक परिस्थितियों और भ्रष्टाचार** के आरोप लंबे समय से डीआरसी के कोबाल्ट खनन उद्योग पर छाए हुए हैं। डीआरसी की **खनिज संपदा** देश के पूर्वी हिस्से में पिछले **तीन दशकों** से जारी **संघर्ष** का भी केंद्र रही है।



# Haiti town mourns as it staggers from Hurricane Melissa

**GS I: Geography: Cyclone**

**Associated Press**

PETIT-GOÂVE

Many in Petit-Goâve were asleep when La Digue river began to rise after midnight. By the time residents in the southern coastal town realised what was happening, it was too late. The river burst its banks and swept away children, cars and homes as the outer bands of Hurricane Melissa lashed southern Haiti in late October.

One man escaped through a window while a woman grabbed onto a car and held her son tight to avoid being dragged by floodwaters that severely broke her leg. They survived, but the Category 5 hurricane, one of the strongest Atlantic storms in recorded history, killed at least 43 people. More than a dozen others remain missing.

Most of the deaths occurred in Petit-Goâve, where the community mourned their own on Saturday.

"Where is my strength?!" cried out Fanile Estival as she opened her arms, dressed in all white to honour her two sons who died in the storm. Eighteen caskets topped with bright yellow and orange flowers were carried into a public plaza where a crowd gathered to say its goodbyes. Many of the coffins were small, with Petit-Goâve losing at least 10 of its children.

Sadness mixed with guilt as the survivors of the storm wept and wailed. Anger also prevailed, with a protest scheduled for Monday along a key highway to demand a quicker response and more aid from the government. The environment in Petit-Goâve remained tense, with some saying the deaths could have been prevented with better planning and infrastructure.

वे बच गए, लेकिन **कैटेगरी 5 हरिकेन**, जो अटलांटिक के दर्ज इतिहास के सबसे शक्तिशाली तूफानों में से एक था, ने हैती में कम से कम **43 लोगों** की जान ले ली।

- More than a dozen others remain missing.  
एक दर्जन से अधिक लोग अब भी लापता हैं।
- Most of the deaths occurred in **Petit-Goâve**, where the community mourned their own on Saturday.  
अधिकांश मौतें **पेटिट-गोआव** में हुईं, जहां समुदाय ने शनिवार को अपने लोगों का शोक मनाया।
- "Where is my strength?!" cried out **Fanile Estival** as she opened her arms, dressed in all white to honour her two sons who died in the storm.  
"मेरी ताकत कहाँ है?!" **फानिले एस्टिनवाल** चिल्लाई, जब उन्होंने तूफान में मारे गए अपने दो बेटों के सम्मान में सफेद कपड़े पहनकर अपने हाथ फैलाए।
- Eighteen caskets topped with bright yellow and orange flowers were carried into a public plaza where a crowd gathered to say its goodbyes.  
अठारह ताबूत, जिन पर चमकीले पीले और नारंगी फूल रखे थे, एक सार्वजनिक चौक में ले जाए गए जहाँ भीड़ अलविदा कहने के लिए इकट्ठा हुई।
- Many of the coffins were small, with **Petit-Goâve** losing at least **10 of its children**.  
कई ताबूत छोटे थे, क्योंकि **पेटिट-गोआव** ने कम से कम **10 बच्चों** को खो दिया।
- Sadness mixed with guilt as the survivors of the storm wept and wailed.  
तूफान से बचे लोग रोते-बिलखते रहे, और दुख के साथ अपराधबोध भी मिला हुआ था।

## Haiti town mourns as it staggers from Hurricane Melissa

**हरिकेन मेलिसा से जूझते हुए हैती का कस्बा शोक में डूबा**

• Many in **Petit-Goâve** were asleep when the La Digue **river** began to rise after midnight.

कई लोग **पेटिट-गोआव** में सो रहे थे जब **ला डिग नदी** आधी रात के बाद बढ़ने लगी।



• By the time residents in the southern coastal town realised what was happening, it was too late.

जब तक दक्षिणी तटीय कस्बे के लोगों को समझ आया कि क्या हो रहा है, तब तक बहुत देर हो चुकी थी।

• The river had **burst its banks** and swept away children, cars and homes as the outer bands of **Hurricane Melissa** lashed southern Haiti in late October.

नदी ने **तटबंध तोड़ दिए** थे और बच्चों, कारों और घरों को बहा दिया था, क्योंकि **हरिकेन मेलिसा** के बाहरी हिस्सों ने अक्टूबर के अंत में दक्षिणी हैती को प्रभावित किया।

• One man escaped through a window while a woman grabbed onto a car and held her son tight to avoid being dragged by **floodwaters** that severely broke her leg. एक व्यक्ति खिड़की से भागकर बचा जबकि एक महिला ने कार पकड़कर अपने बेटे को कसकर पकड़ लिया ताकि **बाढ़ के पानी** में बहने से बच सके, जिसने उसकी टांग बुरी तरह तोड़ दी।

• They survived, but the **Category 5 hurricane**, one of the strongest Atlantic storms in recorded history, killed at least **43 people** in Haiti.



- Anger also prevailed, with a protest scheduled for Monday along a key highway to demand a quicker response and more aid from the **government**.  
गुस्सा भी हावी था, और **सरकार** से तेज़ प्रतिक्रिया और अधिक सहायता की मांग को लेकर सोमवार को एक प्रमुख राजमार्ग पर विरोध प्रदर्शन निर्धारित किया गया।  
The environment in **Petit-Goâve** remained tense, with some saying the deaths could have been prevented with better **planning** and **infrastructure**.  
**पेटिट-गोआव** का माहौल तनावपूर्ण बना रहा, कुछ लोगों का कहना था कि बेहतर **योजना** और **बुनियादी ढांचे** से इन मौतों को रोका जा सकता था।

## In Chile, a presidential vote pits a communist against the far right

**GS I: Geography:**  
**Assoc Mapping**  
SANTIAGO

Chile votes for its next President and Parliament on Sunday in a contest expected to favour the right as candidates play on popular fears over organised crime and immigration.

It's the first of what's likely to be two rounds of presidential elections in the South American country, as polls show none of the candidates clearing the 50% threshold needed to avoid a run-off scheduled for December 14.

On the surface, Sunday's election offers Chileans a dramatic choice between two extremes: Jeannette Jara, 51, a card-carrying communist and former labour Minister in the left-wing government, and, among other right-wing contenders, José Antonio Kast, 59, an ultrac-



Presidential candidate Jeannette Jara embraces relatives during her closing campaign rally in Valparaiso, Chile. AFP

servative lawyer and former lawmaker who opposes abortion and vows to shrink the state.

But with voters anxious about a rise in gang-driven crime that they blame on a recent surge of illegal immigration from crisis-stricken Venezuela, the campaign has steered the starkly opposed front-runners toward the shared theme of public insecurity.

In a feat of political gymnastics, the communist

candidate has promoted fiscal restraint and the Catholic father of nine has avoided talk of traditional family values.

Both say it's a top priority to fight foreign gangs, like Venezuela's Tren de Aragua, whose recent push into Chile has fuelled kidnappings, extortion and sex trafficking and shattered the country's self-perception as far safer and more stable than the rest of the region. "They're talk-

ing about things that all voters care about, they're vying for the centre," said Rodolfo Disi, a political scientist at Chile's Adolfo Ibáñez University.

Polling behind Ms. Jara and Mr. Kast in the eight-candidate field are Johannes Kaiser, 49, a radical libertarian congressman and YouTuber, and Evelyn Matthei, 72, a veteran centre-right politician.

With the right-wing vote divided and President Gabriel Boric's centre-left coalition united behind its former Minister, most experts see the charismatic Ms. Jara prevailing in Sunday's first round. Mr. Boric is constitutionally barred from seeking a consecutive term. But an initial win for Ms. Jara may yet spell her defeat in a run-off against a right-wing rival who promises a harsher security crackdown.

### In Chile, a presidential vote pits a communist against the far right

चिली में, राष्ट्रपति चुनाव एक कम्युनिस्ट को अति-दक्षिणपंथ के खिलाफ खड़ा करता है

- Chile votes for its next **President and Parliament** on Sunday in a contest expected to favour the **right** as candidates play on popular fears over organised crime and **immigration**.  
चिली रविवार को अपने अगले **राष्ट्रपति और संसद** के लिए मतदान करता है, ऐसे मुकाबले में जो **दक्षिणपंथ** के पक्ष में जाने की उम्मीद है क्योंकि उम्मीदवार संगठित अपराध और **आतंजन** को लेकर जनता के डर पर खेल रहे हैं।
- It's the first of what's likely to be **two rounds** of presidential elections in the South American country, as polls show none of the candidates clearing the **50% threshold** needed to avoid a run-off scheduled for **December 14**.





यह दक्षिण अमेरिकी देश में राष्ट्रपति चुनावों के संभावित दो चरणों में से पहला है, क्योंकि सर्वेक्षण दिखाते हैं कि कोई भी उम्मीदवार 14 दिसंबर को निर्धारित रन-ऑफ से बचने के लिए आवश्यक 50% के स्तर को पार नहीं कर रहा है।

- On the surface, Sunday's election offers Chileans a dramatic choice between two extremes: **Jeannette Jara**, 51, a card-carrying **communist** and former labour Minister in the left-wing government, and, among other right-wing contenders, **José Antonio Kast**, 59, an **ultraconservative** lawyer and former lawmaker who opposes **abortion** and vows to shrink the state.

सतह पर, रविवार का चुनाव चिलीवासियों को दो चरम विकल्प प्रदान करता है: **जीनट जारा**, 51, एक **कम्युनिस्ट** सदस्य और वामपंथी सरकार की पूर्व श्रम मंत्री, और अन्य दक्षिणपंथी उम्मीदवारों में, **जोसे एंटोनियो कास्ट**, 59, एक **अति-रूढ़िवादी** वकील और पूर्व विधायक, जो **गर्भपात** का विरोध करते हैं और राज्य को छोटा करने का वादा करते हैं।

- But with voters anxious about a rise in **gang-driven crime** that they blame on a recent surge of **illegal immigration** from crisis-stricken Venezuela, the campaign has steered the starkly opposed front-runners toward the shared theme of **public insecurity**.

लेकिन मतदाता **गैंग-चालित अपराध** में वृद्धि को लेकर चिंतित हैं, जिसके लिए वे संकटग्रस्त वेनेजुएला से **अवैध आवागमन** में हालिया बढ़ोतरी को जिम्मेदार ठहराते हैं। इस कारण, अभियान ने स्पष्ट रूप से विरोधी दोनों प्रमुख उम्मीदवारों को **सार्वजनिक असुरक्षा** की साझा थीम की ओर मोड़ दिया है।

- In a feat of political gymnastics, the **communist candidate** has promoted fiscal restraint and the **Catholic father of nine** has avoided talk of traditional family values. राजनीतिक रणनीति के तहत, **कम्युनिस्ट उम्मीदवार** ने राजकोषीय संयम को बढ़ावा दिया है और **नौ बच्चों के कैथोलिक पिता** ने पारंपरिक पारिवारिक मूल्यों की बात करने से परहेज़ किया है।

- Both say it's a top priority to fight **foreign gangs**, like Venezuela's **Tren de Aragua**, whose recent push into Chile has fuelled kidnappings, extortion and **sex trafficking** and shattered the country's self-perception as safer and more stable than the rest of the region.

दोनों कहते हैं कि **विदेशी गैंगों** से लड़ना शीर्ष प्राथमिकता है, जैसे वेनेजुएला का **ट्रेन डे अरागुआ**, जिसकी हालिया चिली में बढ़ोतरी ने अपहरण, वसूली और **सेक्स तस्करी** को बढ़ावा दिया है और देश की अपने आप को क्षेत्र के बाकी देशों से अधिक सुरक्षित और स्थिर मानने की धारणा को तोड़ दिया है।

- "They're talking about things that all voters care about, they're vying for the **centre**," said **Rodolfo Disi**, a political scientist at Chile's Adolfo Ibáñez University. "वे उन बातों पर चर्चा कर रहे हैं जिनकी सभी मतदाता परवाह करते हैं, वे **मध्यमार्ग** के लिए मुकाबला कर रहे हैं," चिली की अडोल्फो इबानेज़ यूनिवर्सिटी के राजनीतिक वैज्ञानिक **रोडोल्फो डिसी** ने कहा।

- Polling behind Ms. Jara and Mr. Kast in the **eight-candidate field** are **Johannes Kaiser**, 49, a radical libertarian congressman and YouTuber, and **Evelyn Matthei**, 72, a veteran centre-right politician.

**आठ उम्मीदवारों** के मैदान में, सुश्री जारा और श्री कास्ट के पीछे **जोहान्स काइज़र**, 49, एक उग्र लिबर्टेरियन सांसद और यूट्यूबर, और **एवेलिन मत्ती**, 72, एक अनुभवी मध्यम-दक्षिणपंथी राजनेता हैं।

- With the **right-wing vote** divided and President **Gabriel Boric's** centre-left coalition united behind its former Minister, most experts see the charismatic Ms. Jara prevailing in Sunday's first round.

**दक्षिणपंथी वोट** के विभाजित होने और राष्ट्रपति **गेब्रियल बोरीच** के मध्यम-वाम गठबंधन के अपनी पूर्व मंत्री के पीछे एकजुट होने के साथ, अधिकांश विशेषज्ञ करिश्माई सुश्री जारा को रविवार के पहले दौर में आगे बढ़ते देखते हैं।

- Mr. Boric is constitutionally barred from seeking a consecutive term. But an initial win for Ms. Jara may yet spell her defeat in a run-off against a **right-wing rival** who promises a harsher **security crackdown**.

श्री बोरीच लगातार दूसरा कार्यकाल लेने से संवैधानिक रूप से वंचित हैं। लेकिन पहले चरण में सुश्री जारा की जीत संभवतः उन्हें रन-ऑफ में एक **दक्षिणपंथी प्रतिद्वंद्वी** के खिलाफ पराजय की ओर भी ले जा सकती है, जो कड़े **सुरक्षा दमन** का वादा करता है।

## 1. World's Largest Producer of Copper



- Chile produces about **25–30%** of global copper output.
- It is home to **Escondida**, the world's largest copper mine.

## 2. One of the Largest Producers of Lithium

- Located in the "**Lithium Triangle**" (Argentina–Bolivia–Chile).
- Chile is either **2nd or 3rd largest** globally, depending on the year.

## 3. Leading Producer of Iodine and Rhenium

- Chile is the **world's largest iodine producer**.
- Among the world's top producers of **rhenium** (used in superalloys).

# Czechs plan nuclear expansion to double output, end fossil fuel reliance

SSC | Geography Mapping  
Associated Press  
CZECH REPUBLIC

The eight huge cooling towers of the Dukovany power plant overlook a construction site for two more reactors as the Czech Republic pushes ahead with plans to expand its reliance on nuclear energy. Mobile drilling rigs have been extracting samples 140 metres below ground for a geological survey to make sure the site is suitable for a \$19 billion project as part of the expansion that should eventually at least double the country's nuclear output and cement its place among Europe's most nuclear-dependent nations.

South Korea's KHNP beat France's EDF in a tender to construct a new

plant whose two reactors will have an output of over 1,000 megawatts each. After becoming operational in the second half of the 2030s, they will complement Dukovany's four 512-MW reactors that date from the 1980s.

The KHNP deal gives the Czechs an option to have two more units built at the other nuclear plant in Temelin, which currently has two 1,000-megawatt reactors. Then, they are set to follow up with small modular nuclear reactors.

"Nuclear will generate between 50% and 60% around 2050 in the Czech Republic, or maybe slightly more," Petr Závodský, chief executive of the Dukovany project, said.

The nuclear expansion is needed to help the coun-

try went itself off fossil fuels, secure steady and reliable supplies at a reasonable price, meet low emission requirements and enable robust demand for electricity expected in the coming years to power data centres and electric cars, Mr. Závodský said.

The European Union (EU) has accepted nuclear by including it in the classification system for environmentally sustainable economic activities, opening the door to financing.

That has been a boost for the Czech Republic, Slovakia, Hungary and France – the continent's nuclear leader – that have heavily relied on nuclear.

Belgium and Sweden recently scrapped plans to phase out nuclear power. Denmark and Italy are



Ground tests: Workers conduct a geological survey for the nuclear power plant expansion project. AP

reconsidering its use, while Poland is set to join a club of 12 nuclear-friendly nations in the EU after signing a deal with U.S.-based Westinghouse to build three nuclear units.

The EU generated 24% of nuclear electricity in 2024. Britain signed a cooperation deal with the United States in September

that Energy Secretary Ed Miliband said would lead to "a golden age of nuclear in this country."

It will also invest 14.2 billion pounds (\$19 billion) to build the Sizewell C nuclear power plant, the first in the U.K. since 1995.

CEZ, the dominant Czech power company in which the government

holds a 70% stake, and Britain's Rolls-Royce SMR have agreed on a strategic partnership to develop and deploy small modular nuclear reactors.

**EU approval expected**  
The cost of the Dukovany project is estimated at over \$19 billion, with the government agreeing to acquire an 80% majority in the new plant.

Approval is expected to be granted by the EU, which aims to become "climate-neutral" by 2050.

"We're in a good position to argue that we won't be able to do without new nuclear units," Mr. Závodský said. "Today, we get some 40% electricity from nuclear, but we also currently get another 40% from coal. It's clear we

have to replace the coal."

Uncertainty over financing has caused a significant delay in the nuclear expansion. In 2014, CEZ canceled a tender to build two reactors at the existing Temelin nuclear plant after the government refused to provide financial guarantees.

Russia's energy giant Rosatom and China's CNG were excluded from the Dukovany tender on security grounds following the Kremlin's invasion of Ukraine.

CEZ signed a deal with Westinghouse and France's Framatome to supply nuclear fuel for its two nuclear plants, eliminating the country's dependence on Russia. The contract with KHNP secures fuel supplies for 10 years.

While atomic energy en-

joys public support, skeptical voices can be heard at home and abroad.

The Friends of the Earth says it is too costly and the money could be better used for improving the industry. The country also still does not have a permanent storage for spent fuel.

The Dukovany and Temelin plants are located near the border with Austria, which abandoned nuclear energy after the 1986 Chernobyl nuclear explosion. In 2000, a dispute over the Temelin plant resulted in a political crisis and blocked border crossings for weeks.

Austria remains the most nuclear-skeptical EU country and its lower house of Parliament has already rejected the Czech modular reactors plan.

## Czechs plan nuclear expansion to double output, end fossil fuel reliance

चेक गणराज्य परमाणु विस्तार की योजना बना रहा है ताकि उत्पादन दोगुना हो और जीवाश्म ईंधन पर निर्भरता समाप्त हो

- The eight huge cooling towers of the **Dukovany power plant** overlook a construction site for two more reactors as the **Czech Republic** pushes ahead with plans to expand its reliance on nuclear energy.

**डुकोवानी पावर प्लांट** के आठ बड़े कूलिंग टावर दो और रिएक्टरों के निर्माण स्थल के ऊपर दिखाई देते हैं क्योंकि **चेक गणराज्य** अपनी परमाणु ऊर्जा पर निर्भरता बढ़ाने की योजना को आगे बढ़ा रहा है।

- Mobile drilling rigs have been extracting samples **140 metres below ground** for a geological survey to make sure the site is suitable for a **\$19 billion project** as part of the expansion that should eventually at least double the country's nuclear output.

मोबाइल ड्रिलिंग रिग **140 मीटर भूमिगत** नमूनों को निकाल रहे हैं ताकि यह सुनिश्चित किया जा सके कि यह स्थान **19 बिलियन डॉलर की परियोजना** के लिए उपयुक्त है, जो देश के परमाणु उत्पादन को कम से कम दोगुना करेगी।

- South Korea's **KHNP** beat France's **EDF** in a tender to construct a new plant whose two reactors will have an output of over **1,000 megawatts** each.





दक्षिण कोरिया की KHNP ने फ्रांस की EDF को नए संयंत्र के निर्माण के निविदा में हराया, जिसके दो रिएक्टरों की क्षमता 1,000 मेगावाट से अधिक होगी।

- After becoming operational in the **second half of the 2030s**, they will complement Dukovany's four **512-MW reactors** that date from the 1980s.  
**2030 के दशक के दूसरे भाग** में परिचालन में आने के बाद, वे डुकोवानी के चार **512-MW रिएक्टरों** को पूरक करेंगे जो 1980 के दशक के हैं।
- The KHNP deal gives the Czechs an option to have **two more units** built at the other nuclear plant in **Temelín**, which currently has two 1,000-megawatt reactors.  
KHNP समझौता चेक गणराज्य को **टेमेलीन** परमाणु संयंत्र में **दो और इकाइयाँ** बनाने का विकल्प देता है, जिसमें वर्तमान में दो 1,000 मेगावाट रिएक्टर हैं।
- Then, they are set to follow up with **small modular nuclear reactors**.  
इसके बाद, वे **छोटे मॉड्यूलर परमाणु रिएक्टरों** को भी स्थापित करने वाले हैं।
- "Nuclear will generate between **50% and 60%** around **2050** in the Czech Republic," Petr Závodský, chief executive of the Dukovany project, said.  
"2050 तक चेक गणराज्य में परमाणु ऊर्जा **50% से 60%** तक उत्पादन करेगी," डुकोवानी परियोजना के मुख्य कार्यकारी पेटर ज़ावोडस्की ने कहा।
- The nuclear expansion is needed to help the country wean itself off **fossil fuels**, secure reliable supplies, meet **low emission** requirements and power rising demand for **data centres** and **electric cars**.  
परमाणु विस्तार देश को **जीवाश्म ईंधन** से छुटकारा दिलाने, विश्वसनीय आपूर्ति सुनिश्चित करने, **कम उत्सर्जन** आवश्यकताओं को पूरा करने और **डेटा केंद्रों** तथा **इलेक्ट्रिक कारों** की बढ़ती मांग को पूरा करने के लिए आवश्यक है।
- The **European Union (EU)** has accepted nuclear by including it in the classification for **sustainable economic activities**, opening the door to financing.  
**यूरोपीय संघ (EU)** ने परमाणु ऊर्जा को **सतत आर्थिक गतिविधियों** की श्रेणी में शामिल करके स्वीकार किया है, जिससे वित्तपोषण का रास्ता खुल गया है।
- This has boosted the Czech Republic, **Slovakia, Hungary and France**, which heavily rely on nuclear energy.  
इससे चेक गणराज्य, **स्लोवाकिया, हंगरी और फ्रांस** जैसे परमाणु-निर्भर देशों को बढ़ावा मिला है। Belgium and Sweden recently scrapped plans to **phase out nuclear power**, while Denmark and Italy are reconsidering its use.  
बेल्जियम और स्वीडन ने हाल ही में **परमाणु ऊर्जा को चरणबद्ध तरीके से समाप्त** करने की योजना रद्द कर दी, जबकि डेनमार्क और इटली इसके उपयोग पर पुनर्विचार कर रहे हैं।
- Poland is set to join the **12 nuclear-friendly nations** in the EU after signing a deal with **Westinghouse** to build three nuclear units.  
पोलैंड **वेस्टिंगहाउस** के साथ तीन परमाणु इकाइयाँ बनाने के समझौते के बाद ईयू की **12 परमाणु-समर्थक देशों** की सूची में शामिल होने जा रहा है।
- The EU generated **24%** of nuclear electricity in 2024.  
ईयू ने 2024 में **24%** परमाणु बिजली उत्पन्न की।
- Britain signed a cooperation deal with the **United States** in September that will lead to "a **golden age of nuclear power in this country**."  
ब्रिटेन ने सितंबर में **संयुक्त राज्य अमेरिका** के साथ एक समझौते पर हस्ताक्षर किए, जो देश में "परमाणु का स्वर्ण युग" लाएगा।
- Britain will invest **14.2 billion pounds (\$19 billion)** to build the **Sizewell C** nuclear power plant, the first since 1995.  
ब्रिटेन **14.2 बिलियन पाउंड (19 बिलियन डॉलर)** का निवेश कर **साइज़वेल C** परमाणु संयंत्र का निर्माण करेगा, जो 1995 के बाद पहला होगा।
- CEZ and **Rolls-Royce SMR** have agreed on a partnership to deploy **small modular reactors**.  
CEZ और **रोल्स-रॉयस SMR** ने **छोटे मॉड्यूलर रिएक्टरों** को तैनात करने के लिए साझेदारी पर सहमति जताई है।
- The cost of the **Dukovany project** is over **\$19 billion**, with the government acquiring an **80% majority** in the new plant.  
**डुकोवानी परियोजना** की लागत **19 बिलियन डॉलर** से अधिक है, जिसमें सरकार नए संयंत्र में **80% बहुमत** ले रही है।



- Approval is expected from the **EU**, which aims to be **climate-neutral by 2050**.  
ईयू से मंजूरी की उम्मीद है, जो **2050 तक जलवायु-तटस्थ** बनने का लक्ष्य रखता है।
- “We get some **40% electricity** from nuclear and another **40% from coal**. It's clear we have to replace the coal,” Mr. Závodský said.  
“हम **40% बिजली** परमाणु से और **40% कोयले** से प्राप्त करते हैं। यह स्पष्ट है कि हमें कोयले को बदलना होगा,” श्री ज़ावोडस्की ने कहा।
- Uncertainty over financing caused a major delay; in **2014**, CEZ cancelled a tender to build two reactors after the government refused **financial guarantees**.  
वित्तपोषण में अनिश्चितता के कारण बड़ी देरी हुई; **2014** में CEZ ने दो रिएक्टर बनाने की निविदा रद्द कर दी क्योंकि सरकार ने **वित्तीय गारंटी** देने से इनकार कर दिया।
- Russia's **Rosatom** and China's **CNG** were excluded from the Dukovany tender on **security grounds** after Russia's invasion of Ukraine.  
रूस की **रोसाटॉम** और चीन की **CNG** को रूस के यूक्रेन पर हमले के बाद **सुरक्षा कारणों** से डुकोवानी निविदा से बाहर कर दिया गया।
- CEZ signed a deal with **Westinghouse** and **Framatome** to supply nuclear fuel, ending reliance on Russia; the KHNP deal secures **10 years** of fuel.  
CEZ ने **वेस्टिंगहाउस** और **फ्रामाटोम** के साथ परमाणु ईंधन की आपूर्ति के लिए समझौता किया, जिससे रूस पर निर्भरता समाप्त हुई; KHNP समझौता **10 वर्षों** के ईंधन की आपूर्ति सुनिश्चित करता है।
- Critics like **Friends of the Earth** say nuclear power is too costly, and money should be used to improve the industry.  
**फ्रेंड्स ऑफ़ द अर्थ** जैसे आलोचकों का कहना है कि परमाणु ऊर्जा बहुत महंगी है और पैसे का उपयोग उद्योग में सुधार के लिए होना चाहिए।
- The country still lacks **permanent storage** for spent fuel.  
देश में अब भी खर्च हो चुके ईंधन के लिए **स्थायी भंडारण** नहीं है।
- The Dukovany and Temelín plants are near the **Austrian border**, which abandoned nuclear energy after the **1986 Chernobyl** disaster.  
डुकोवानी और टेमेलीन संयंत्र **ऑस्ट्रियाई सीमा** के पास हैं, जिसने **1986 चेरनोबिल** आपदा के बाद परमाणु ऊर्जा को त्याग दिया था।  
In 2000, a dispute over the Temelín plant caused a **political crisis** and blocked **border crossings** for weeks.  
2000 में टेमेलीन संयंत्र पर विवाद ने **राजनीतिक संकट** पैदा कर दिया और **सीमा पार आवागमन** को हफ्तों तक रोक दिया।
- Austria remains the most **nuclear-skeptical** EU country and has rejected the Czech **modular reactors plan**.  
ऑस्ट्रिया ईयू का सबसे **परमाणु-संदेही** देश बना हुआ है और उसने चेक **मॉड्यूलर रिएक्टर योजना** को खारिज कर दिया है।

## GS Paper II: Polity, Governance, And International Relations

**TOPICS COVERED**

**17 November 2025**

**Polity**



1.	<b>27 lakh workers removed from MGNREGS database as Centre conducts e-KYC</b> एमजीएनआरईजीएस डाटाबेस से 27 लाख मजदूर हटाए गए क्योंकि केंद्र ई-केवाईसी कर रहा है
2.	<b>Too little, much later</b> बहुत कम, बहुत देर से
3.	<b>Decoding the NDA's landslide win in Bihar</b> बिहार में एनडीए की भारी जीत का विश्लेषण
4.	<b>Consumer cases handled by e-Jagruti portal since its launch</b> e-जागृति पोर्टल द्वारा इसके लॉन्च के बाद से निपटाए गए उपभोक्ता मामले
5.	<b>What are Digital Personal Data Protection Rules?</b> डिजिटल व्यक्तिगत डेटा संरक्षण नियम क्या हैं?
<b>International Relations</b>	
6.	<b>Jaishankar, Qatar PM discuss bilateral cooperation</b> जयशंकर, कतर के प्रधानमंत्री ने द्विपक्षीय सहयोग पर चर्चा की

<b>Polity</b>	<b>17/11/2025</b>
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PATRIOTICIAS



## 27 lakh workers removed from MGNREGS database as Centre conducts e-KYC

GS II: Polity: Government Scheme  
NEW DELHI

Nearly 27 lakh workers' names were removed from the database of Mahatma Gandhi National Rural Employment Guarantee Scheme (MGNREGS), the Centre's rural jobs scheme, between October 10 and November 14, far exceeding the 10.5 lakh additions during the same period.

The spike in deletions coincides with the Centre's push to conduct e-KYC — an electronic know your customer process — for all workers, to weed out ineligible beneficiaries.

This "unusual" rate of deletions from the database was flagged by Lib Tech, a consortium of activists and academicians. Over the last six months, deletions added up to about 15 lakh. But in just one month, they shot up to 27 lakh — nearly double the earlier six-month total.

In the first six months of the financial year 2025-26, according to the analysis, the scheme recorded net additions of 83.6 lakh workers, as 98.8 lakh workers were added, against 15.2 lakh deletions. By mid-November, however, net additions had fallen to 66.5 lakh, effectively wiping out 17 lakh workers in a single month.

The analysis also noted that 6 lakh of these beneficiaries were active workers, defined as those who have worked at least one day in the past three years.

### Highest in A.P.

States with high e-KYC completion rates are leading the trend in deletions. In Andhra Pradesh, where 78.4% of workers have completed e-KYC, there were 15.92 lakh deletions. Tamil Nadu (67.6%) saw 30,529 deletions, and Chhattisgarh (66.6%) reported 1.04 lakh.

Senior officials at the Union Ministry of Rural Development, however, ruled out any correlation between the e-KYC drive and the deletions. A senior official, speaking on condition of anonymity, said that verification of the MGNREGS job card is a continuous



Hard labor work site

process. State governments are not immediately aware of the deletions, say activists.

Additionally, every five years, job cards must be renewed. This exercise is currently underway. "We have also issued a Standard Operating Procedure (SOPs) for the deletion of any job card, which includes putting out the job cards finalised for deletion in public domain, allowing time for the beneficiaries to file an appeal, and a final approval from the gram sabha," a top official at the Ministry said.

### Prevent 'misuse'

The e-KYC process requires the mates, or MGNREGS supervisors, to click pictures of each of the workers and upload them on the MGNREGS's digital attendance application, the National Mobile Monitoring System (NMMS), to match these photographs with their Aadhaar data.

One of the reasons the government introduced e-KYC as an additional layer of verification was the discovery that the NMMS platform was being "misused".

On July 8, the Ministry issued a 13-page note to State governments on the issue. Under NMMS, geo-tagged photographs of the workers are to be uploaded twice a day. It was found that "irrelevant or unrelated photographs" were being uploaded. In many cases, "photo-to-photo capturing instead of live work images" was being done. There was also "mismatch in actual vs recorded count", according to the Ministry note.

It said that a mismatch in the gender composition of workers was found at

ing and afternoon photos, and non-uploading of photos in afternoon sessions were also identified as problems.

The Ministry had directed States to ensure that these photographs and the attendance of workers were verified at the gram panchayat, block, district and State levels.

The Ministry had also made the Aadhaar Based Payment System (ABPS) mandatory from the beginning of 2023. Using a worker's unique 12-digit Aadhaar number as her financial address, this system requires a worker's name and other demographic details to match exactly on her Aadhaar, job card, and bank account. This was also introduced to eliminate "ghost and duplicate job cards" but led to the exclusion of many genuine workers as well.

"The current deletion pattern echoes the roll out of the Aadhaar based payment system, which too saw deletions rise by 247% between 2021-22 and 2022-23," said Chakradhar Buddha, senior researcher at Lib Tech.

"Each time a new Aadhaar-linked technology is introduced — whether it was ABPS earlier or e-KYC now — it is brought in to strengthen verification, but ends up creating new hurdles for genuine workers and triggering large-scale exclusions. This surge in deletions shows that new technologies should not be introduced indiscriminately, without assessing their impact on workers," he said.

## 27 lakh workers removed from MGNREGS database as Centre conducts e-KYC

एमजीएनआरईजीएस डाटाबेस से 27 लाख मजदूर हटाए गए क्योंकि केंद्र ई-केवाईसी कर रहा है

### Main Points मुख्य बिंदु

- 27 lakh workers removed from MGNREGS database as Centre conducts e-KYC

एमजीएनआरईजीएस डाटाबेस से 27 लाख मजदूर हटाए गए क्योंकि केंद्र ई-केवाईसी कर रहा है

Nearly 27 lakh workers' names were removed from the database of Mahatma Gandhi National Rural Employment Guarantee Scheme (MGNREGS), the Centre's rural jobs scheme, between October 10 and November 14, far exceeding the 10.5 lakh additions during the same period.

अक्टूबर 10 से नवंबर 14 के बीच महात्मा गांधी राष्ट्रीय ग्रामीण रोजगार गारंटी योजना (एमजीएनआरईजीएस), जो केंद्र की ग्रामीण रोजगार योजना है, के डाटाबेस से लगभग 27 लाख मजदूरों के नाम हटाए गए, जो इसी अवधि में हुए 10.5 लाख नए जोड़ से कहीं अधिक है।

The spike in deletions coincides with the Centre's push to conduct e-KYC — an electronic know your customer process — for all workers, to weed out ineligible beneficiaries. हटाए जाने में आई बढ़ती केंद्र द्वारा सभी मजदूरों के लिए ई-केवाईसी — इलेक्ट्रॉनिक नो योर कस्टमर प्रक्रिया — लागू करने के प्रयास के साथ मेल खाती है, ताकि अपात्र लाभार्थियों को हटाया जा सके।

This "unusual" rate of deletions from the database was flagged by Lib Tech, a consortium of activists and academicians.

डाटाबेस से हटाए जाने की इस "असामान्य" दर को लिब टेक, जो कार्यकर्ताओं और शिक्षाविदों का एक समूह है, द्वारा चिह्नित किया गया।

Over the last six months, deletions added up to about 15 lakh. But in just one month, they shot up to 27 lakh — nearly double the earlier six-month total.

पिछले छह महीनों में हटाए जाने की संख्या लगभग 15 लाख थी। लेकिन केवल एक महीने में यह बढ़कर 27 लाख हो गई — जो पहले छह महीनों के कुल आंकड़े से

लगभग दोगुनी है।

- In the first six months of the financial year 2025-26, according to the analysis, the scheme recorded net additions of 83.6 lakh workers, as 98.8 lakh workers were added, against 15.2 lakh deletions.



विश्लेषण के अनुसार, वित्त वर्ष 2025-26 के पहले छह महीनों में योजना में 83.6 लाख मजदूरों की शुद्ध वृद्धि हुई, क्योंकि 98.8 लाख मजदूर जोड़े गए थे, जबकि 15.2 लाख हटाए गए थे।

- By mid-November, however, net additions had fallen to 66.5 lakh, effectively wiping out 17 lakh workers in a single month.  
हालांकि, मध्य नवंबर तक शुद्ध बढ़ोतरी घटकर 66.5 लाख रह गई, जिससे एक ही महीने में प्रभावी रूप से 17 लाख मजदूर हट गए।
- The analysis also noted that 6 lakh of these beneficiaries were active workers, defined as those who have worked at least one day in the past three years.  
विश्लेषण में यह भी पाया गया कि इनमें से 6 लाख लाभार्थी सक्रिय मजदूर थे, जिन्हें पिछले तीन वर्षों में कम से कम एक दिन काम करने वाले के रूप में परिभाषित किया गया है।

### Highest in A.P. आंध्र प्रदेश में सर्वाधिक

- States with high e-KYC completion rates are leading the trend in deletions.  
जिन राज्यों में ई-केवाईसी पूर्णता दर अधिक है, वे हटाए जाने की प्रवृत्ति में आगे हैं।
- In **Andhra Pradesh**, where **78.4%** of workers have completed e-KYC, there were **15.92 lakh deletions**.  
आंध्र प्रदेश, जहां **78.4%** मजदूरों ने ई-केवाईसी पूरी की है, में **15.92 लाख हटाए गए**।
- **Tamil Nadu (67.6%)** saw **30,529 deletions**, and **Chhattisgarh (66.6%)** reported **1.04 lakh**.  
तमिलनाडु (67.6%) में **30,529 हटाए गए**, और छत्तीसगढ़ (66.6%) में **1.04 लाख दर्ज किए गए**।

### Officials deny link अधिकारियों ने संबंध से इनकार किया

- Senior officials at the Union Ministry of Rural Development, however, ruled out any correlation between the e-KYC drive and the deletions.  
हालांकि, ग्रामीण विकास मंत्रालय के वरिष्ठ अधिकारियों ने ई-केवाईसी अभियान और हटाए जाने के बीच किसी भी संबंध से इनकार किया है।
- A senior official, speaking on condition of anonymity, said that verification of the MGNREGS job card is a continuous process and the onus is on State governments and ultimately, the gram panchayats, to carry this out.  
एक वरिष्ठ अधिकारी, जिन्होंने नाम न छापने की शर्त पर बात की, ने कहा कि एमजीएनआरईजीएस जॉब कार्ड का सत्यापन एक सतत प्रक्रिया है और इसे करने की जिम्मेदारी राज्य सरकारों और अंततः ग्राम पंचायतों की होती है।
- Additionally, every five years, job cards must be renewed. This exercise is currently underway.  
इसके अलावा, हर पांच साल में जॉब कार्डों का नवीनीकरण आवश्यक है। यह प्रक्रिया वर्तमान में चल रही है।
- “We have also issued a **Standard Operating Procedure (SOPs)** for the deletion of any job card, which includes putting out the job cards finalised for deletion in public domain, allowing time for the beneficiaries to file an appeal, and a final approval from the gram sabha,” a top official at the Ministry said.  
मंत्रालय के एक शीर्ष अधिकारी ने कहा, “हमने किसी भी जॉब कार्ड को हटाने के लिए **मानक संचालन प्रक्रिया (एसओपी)** भी जारी की है, जिसमें हटाने के लिए अंतिम रूप दिए गए जॉब कार्डों को सार्वजनिक डोमेन में डालना, लाभार्थियों को अपील करने का समय देना, और ग्राम सभा से अंतिम मंजूरी प्राप्त करना शामिल है।”

### Prevent ‘misuse’ ‘दुरुपयोग’ रोके

- The e-KYC process requires the **mates**, or MGNREGS supervisors, to click pictures of each of the workers and upload them on the **MGNREGS’s digital attendance application**, the **National Mobile Monitoring System (NMMS)**, to match these



photographs with their Aadhaar data.

ई-केवाईसी प्रक्रिया में **मेट्स**, यानी एमजीएनआरईजीएस पर्यवेक्षकों, को प्रत्येक मजदूर की तस्वीर लेनी होती है और उसे एमजीएनआरईजीएस की डिजिटल उपस्थिति एप्लिकेशन **नेशनल मोबाइल मॉनिटरिंग सिस्टम (एनएमएमएस)** पर अपलोड करना होता है, ताकि इन तस्वीरों का आधार डेटा से मिलान किया जा सके।

- One of the reasons the government introduced e-KYC as an additional layer of verification was the discovery that the NMMS platform was being “misused”.  
सरकार द्वारा ई-केवाईसी को एक अतिरिक्त सत्यापन स्तर के रूप में लागू किए जाने का एक कारण यह था कि एनएमएमएस प्लेटफॉर्म का “दुरुपयोग” किया जा रहा था।
- On July 8, the Ministry issued a 13-page note to State governments on the issue.  
8 जुलाई को मंत्रालय ने इस मुद्दे पर राज्य सरकारों को 13-पृष्ठ का नोट जारी किया।
- Under NMMS, geo-tagged photographs of the workers are to be uploaded twice a day.  
एनएमएमएस के तहत मजदूरों की जियो-टैग्ड तस्वीरें दिन में दो बार अपलोड की जानी चाहिए।
- It was found that “irrelevant or unrelated photographs” were being uploaded.  
पाया गया कि “अप्रासंगिक या असंबंधित तस्वीरें” अपलोड की जा रही थीं।
- In many cases, “photo-to-photo capturing instead of live work images” was being done.  
कई मामलों में “लाइव काम की तस्वीरों के बजाय फोटो-टू-फोटो कैप्चरिंग” की जा रही थी।
- There was also “mismatch in actual vs recorded count”, according to the Ministry note.  
मंत्रालय के नोट के अनुसार “वास्तविक बनाम दर्ज संख्या में असंगति” भी पाई गई।
- It said that a mismatch in the gender composition of workers was found at several worksites.  
इसमें कहा गया कि कई कार्य स्थलों पर मजदूरों की लैंगिक संरचना में असंगति पाई गई।
- The same photo of workers in multiple muster rolls, mismatch in workers in morning and afternoon photos, and non-uploading of photos in afternoon sessions were also identified as problems.  
कई मजदूरों की एक ही तस्वीर का कई मास्टर रोल्स में दिखना, सुबह और दोपहर की तस्वीरों में मजदूरों की संख्या में असंगति, और दोपहर की तस्वीरों का अपलोड न होना भी समस्याओं के रूप में पहचाना गया।
- The Ministry had directed States to ensure that these photographs and the attendance of workers were verified at the gram panchayat, block, district and State levels.  
मंत्रालय ने राज्यों को निर्देश दिया था कि इन तस्वीरों और मजदूरों की उपस्थिति की ग्राम पंचायत, ब्लॉक, जिला और राज्य स्तर पर जांच सुनिश्चित की जाए।

## Aadhaar Based Payment System (ABPS)

### आधार आधारित भुगतान प्रणाली (एबीपीएस)

- The Ministry had also made the **Aadhaar Based Payment System (ABPS) mandatory from the beginning of 2023**.  
मंत्रालय ने 2023 की शुरुआत से **आधार आधारित भुगतान प्रणाली (एबीपीएस)** को अनिवार्य भी कर दिया था।
- Using a worker’s unique 12-digit Aadhaar number as her financial address, this system requires a worker’s name and other demographic details to match exactly on her Aadhaar, job card, and bank account.  
एक मजदूर के अद्वितीय 12-अंकीय आधार नंबर को उसके वित्तीय पते के रूप में उपयोग करते हुए, इस प्रणाली में उसके आधार, जॉब कार्ड और बैंक खाते पर नाम और अन्य जनसांख्यिकीय विवरणों का बिल्कुल मेल आवश्यक है।
- This was also introduced to eliminate “ghost and duplicate job cards” but led to the exclusion of many genuine workers as well.  
इसे “घोस्ट और डुप्लीकेट जॉब कार्ड” हटाने के लिए लागू किया गया था, लेकिन इससे कई वास्तविक मजदूर भी बाहर हो गए।



- “The current deletion pattern echoes the roll out of the Aadhaar based payment system, which too saw **deletions rise by 247% between 2021-22 and 2022-23,**” said Chakradhar Buddha, senior researcher at Lib Tech.  
लिब टेक के वरिष्ठ शोधकर्ता चक्रधर बुद्धा ने कहा, “वर्तमान हटाने का पैटर्न आधार आधारित भुगतान प्रणाली की शुरुआत जैसा ही है, जिसमें 2021-22 और 2022-23 के बीच हटाए जाने में **247%** वृद्धि हुई थी।”
- “Each time a new **Aadhaar-linked technology** is introduced — whether it was ABPS earlier or e-KYC now — it is brought in to strengthen verification, but ends up creating new hurdles for genuine workers and triggering large-scale exclusions.  
“हर बार जब कोई नई **आधार-लिंक्ड तकनीक** पेश की जाती है — चाहे वह पहले एबीपीएस हो या अब ई-केवाईसी — इसे सत्यापन को मजबूत करने के लिए लाया जाता है, लेकिन यह वास्तविक मजदूरों के लिए नई बाधाएं पैदा कर देती है और बड़े पैमाने पर बहिष्कार का कारण बनती है।
- This surge in deletions shows that new technologies should not be introduced indiscriminately, without assessing their impact on workers,” he said.  
उन्होंने कहा, “हटाने में यह बढ़ोतरी दिखाती है कि नई तकनीकों को मजदूरों पर उनके प्रभाव का आकलन किए बिना अंधाधुंध तरीके से लागू नहीं किया जाना चाहिए।”

### Too little, much later

The Digital Personal Data Protection Rules, 2025 undermine right to information

Over eight years have passed since the Supreme Court of India held privacy to be a fundamental right. In the interceding years, three separate drafts for a data protection law have been floated, with little visibility into how the final contours of the Act took shape. The 2023 law achieved simplification of the 2018 draft, with some important protections for user data baked into law. But this was at the cost of giving a wide berth for government organisations to handle the data of Indians, putting in place an anaemic Data Protection Board of India (DPBI), and cruelly amending the Right to Information (RTI) Act, 2005, setting back major advances in transparency achieved over the last two decades.

The Digital Personal Data Protection Rules, 2025, notified on November 14, 2025, do little to repair the glaring gaps and damage from the parent Act. In fact, they delay the implementation of practically all key protections to 2027, while implementing the dilution of the RTI Act immediately; public information officers are now authorised to decline any personal information except what is already required to be published by other laws — an all-too-thin slice of the pie for citizens seeking accountability. This is after the government dragged out a three-month consultation period for draft rules which were already delayed, and launched the final form in the heat of the day the Bihar Assembly election results were announced.

The delays to reach this point were unfortunate, in January, when the draft Rules were put out, and are inexcusable now. Little has been changed in the Rules' final form, and the 12-18 months of a compliance timeline, even for giants of the technology industry that have known about this framework well in advance, does not stand the test of good faith. The lack of independence of the institutional framework underpinning these equivocations is particularly worrying: as an example of why, the DPBI will operate under the Ministry of Electronics and Information Technology. A result of this is that the same government organisation courting big-ticket investments into India from the world's main data guzzlers, firms such as Google, Amazon and Meta, will supervise the body investigating their future mishandling of the data of Indians. Firms handling the data of Indians have few reasons to be upset with Friday's Rules, as they will have over a year to fully implement the document's limited aspirations. But for the citizen seeking the aim in the Act and Rules' title — privacy and accountability from public and private actors with whom sharing data has become an implicit and unavoidable condition of modern digital existence — they will now find that their status quo largely continues: of being open books to the state and Big Tech, on the reflective side of a mirror that hides what is behind it.

### Too little, much later बहुत कम, बहुत देर से

#### Digital Personal Data Protection Rules, 2025

#### डिजिटल व्यक्तिगत डेटा संरक्षण नियम, 2025

- Over eight years have passed since the Supreme Court of India held **privacy** to be a **fundamental right**.  
भारत के सर्वोच्च न्यायालय द्वारा **privacy** को **मौलिक अधिकार** घोषित किए हुए आठ वर्ष से अधिक बीत चुके हैं।
- In the interceding years, three separate drafts for a **data protection law** have been floated, with little visibility into how the final contours of the Act took shape. इन वर्षों में **data protection law** के तीन अलग-अलग ड्राफ्ट जारी किए गए, लेकिन यह स्पष्ट नहीं था कि अंतिम कानून का स्वरूप कैसे बना।
- The **2023 law** achieved simplification of the **2018 draft**, with some important protections for user data baked into law. **2023 के कानून ने 2018 ड्राफ्ट** को सरल बनाया, और कुछ महत्वपूर्ण user data protections को कानून में शामिल किया।
- But this was at the cost of giving a wide berth for **government organisations** to handle the data of Indians, putting in place an anaemic **Data Protection Board of India (DPBI)**, and cruelly amending the **Right to Information (RTI) Act, 2005**, setting back major advances in **transparency** achieved over the last two decades. लेकिन इसकी कीमत यह रही कि **government organisations** को भारतीयों के डेटा को संभालने के लिए व्यापक छूट मिल गई, एक कमजोर **DPBI** स्थापित किया गया, और **RTI Act, 2005** में कठोर संशोधन किए गए, जिससे दो दशकों में **transparency** में हुई प्रगति पीछे चली गई।
- The **Digital Personal Data Protection Rules, 2025**, notified on **November 14, 2025**, do little to repair the glaring gaps and damage from the parent Act. **14 November 2025** को अधिसूचित **Digital Personal Data Protection Rules, 2025** मूल कानून की कमियों और नुकसानों को दूर करने के लिए बहुत कम करती हैं।
- In fact, they delay the implementation of practically all key protections to **2027**, while implementing the dilution of the **RTI Act** immediately; **public information officers** are now authorised to decline any personal information except what is already required to be published by other laws — an all-too-thin slice of the pie for citizens seeking accountability.



वास्तव में, ये लगभग सभी महत्वपूर्ण प्रावधानों को 2027 तक टाल देती हैं, जबकि RTI Act का कमजोर किया जाना तुरंत लागू हो गया; अब PIOs किसी भी personal जानकारी को देने से मना कर सकते हैं, सिवाय उन सूचनाओं के जिन्हें अन्य कानूनों द्वारा पहले से अनिवार्य किया गया है — जो accountability चाहने वाले नागरिकों के लिए अत्यंत सीमित दायरा है।

- This is after the government dragged out a **three-month consultation period** for draft rules which were already delayed, and launched the final form in the heat of the day the **Bihar Assembly election results** were announced.  
यह तब हुआ जब सरकार ने ड्राफ्ट नियमों के लिए **तीन महीने** की सलाह-मशविरा अवधि खींची, और अंतिम रूप उसी दिन जारी किया जब **बिहार विधानसभा चुनाव परिणाम** घोषित हुए।
- The delays to reach this point were unfortunate, in January, when the draft Rules were put out, and are inexcusable now.  
यह देरी दुर्भाग्यपूर्ण थी, जब जनवरी में ड्राफ्ट नियम जारी किए गए, और अब यह बिल्कुल अक्षम्य है।
- Little has been changed in the Rules' final form, and the **12–18 months** of a compliance timeline, even for giants of the technology industry that have known about this framework well in advance, does not stand the test of good faith.  
अंतिम नियमों में बहुत कम बदलाव किया गया है, और **12–18 महीने** की compliance अवधि, यहाँ तक कि बड़ी तकनीकी कंपनियों के लिए भी, जो इस ढांचे के बारे में पहले से जानती थीं, अच्छे विश्वास की कसौटी पर खरा नहीं उतरती।
- The lack of independence of the institutional framework underpinning these equivocations is particularly worrying: as an example of why, the **DPBI will operate under the Ministry of Electronics and Information Technology (MeitY)**.  
इन अस्पष्टताओं के पीछे की संस्थागत संरचना का स्वतंत्र न होना विशेष चिंता का विषय है: उदाहरण के तौर पर, **DPBI MeitY** के अधीन काम करेगी।
- A result of this is that the same government organisation courting **big-ticket investments** into India from the world's main **data guzzlers**, firms such as **Google, Amazon and Meta**, will supervise the body investigating their future mishandling of the data of Indians.  
इसका परिणाम यह है कि वही सरकारी संस्था जो **Google, Amazon, Meta** जैसे वैश्विक **data guzzlers** से **big-ticket investments** ला रही है, वही भारतीयों के डेटा के दुरुपयोग की जांच करने वाली संस्था की निगरानी भी करेगी।
- Firms handling the data of Indians have few reasons to be upset with Friday's Rules, as they will have over a year to fully implement the document's limited aspirations.  
भारतीयों का डेटा संभालने वाली कंपनियों के पास नए नियमों से नाराज़ होने के कम कारण हैं, क्योंकि उन्हें सीमित प्रावधानों को लागू करने के लिए एक वर्ष से अधिक का समय मिलेगा।
- **But for the citizen seeking the aim in the Act and Rules' title — privacy and accountability from public and private actors with whom sharing data has become an implicit and unavoidable condition of modern digital existence** — they will now find that their status quo largely continues: of being open books to the state and **Big Tech**, on the reflective side of a mirror that hides what is behind it.  
लेकिन उस नागरिक के लिए जो Act और Rules के शीर्षक में निहित उद्देश्य — **privacy** और **accountability** — चाहता है, जबकि आधुनिक डिजिटल जीवन में डेटा साझा करना अनिवार्य शर्त बन चुका है, उनकी स्थिति लगभग वैसी ही रहेगी: राज्य और **Big Tech** के लिए खुले किताब की तरह, और एक ऐसी दर्पण की सतह पर जहां दूसरी तरफ क्या है, वह छिपा रहता है।



## NEWS IN NUMBERS

### Consumer cases handled by e-Jagriti portal since its launch

GS II: Polity: Justice

**1.3** lakh. The government's e-Jagriti digital consumer grievance platform has processed about 1,30,000 cases since its launch in January, with more than 2,00,000 users, including non-resident Indians, registering on the unified portal, the Consumer Affairs Ministry said. AFP

Consumer cases handled by e-Jagriti portal since its launch

e-जागृति पोर्टल द्वारा इसके लॉन्च के बाद से निपटाए गए उपभोक्ता मामले

• The government's e-Jagriti digital consumer grievance platform has processed about 1,30,000 cases since its launch in January, with more than 2,00,000 users, including non-resident Indians, registering on the unified portal, the Consumer Affairs Ministry said.

1.3 लाख। उपभोक्ता कार्य मंत्रालय ने कहा कि सरकार के e-जागृति डिजिटल उपभोक्ता शिकायत प्लेटफॉर्म ने जनवरी में लॉन्च होने के बाद से लगभग 1,30,000 मामले प्रोसेस किए हैं, और 2,00,000 से अधिक उपयोगकर्ता, जिनमें प्रवासी भारतीय भी शामिल हैं, एकीकृत पोर्टल पर पंजीकृत हुए हैं।

PATRIOTIC IAS



# What are Digital Personal Data Protection Rules?

Has the Data Protection Board of India already been formed? Who are data fiduciaries and data principals? How does the DPDP Act aim to protect children? How has the Right to Information Act, 2005 been amended? What has the Mazdoor Kisan Shakti Sangathan said?

**Q&A: Digital Personal Data Protection Act, 2023**

## EXPLAINER

Aroon Deep

### The story so far:

**T**he Digital Personal Data Protection Rules (DPDP), 2025 were notified this week, kicking off the formation of the Data Protection Board of India (DPBI), and the legal framework for safeguarding the data of Indians online. The DPDP Act itself was passed in Parliament in August 2023, and the draft of the Rules that were notified on November 14, 2025 were released for consultation in January.

### What do the DPDP Act and Rules do?

The DPDP Act, 2023 is India's data protection law just as other major countries have their own data protection regimes such as that in Europe (the General Data Protection Regulation (GDPR)) and Singapore (Personal Data Protection Act, 2012). Like these regimes, the Act sets out some baselines for how companies ("data fiduciaries") should handle data of their users in India ("data principals"). For instance, there must be access control and encryption, along with security audits for large firms ("significant data fiduciaries").

Further, data principals are required to take "informed" consent from their users, and anyone whose data they collect, by giving a summary of what data they are collecting, and how they will use it. The Act also gives users the right to erase or modify data they provide to firms, or to delete it. After a specified period of inactivity, firms are under an obligation to delete the data they have on users. A Data Protection Officer (DPO) has to be appointed by large firms, who will oversee compliance.

The Act also restricts targeted advertising and certain data collection from children. The Rules carve out an



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exemption here for parents tracking their children's location.

To allow users to exercise rights across a variety of fiduciaries (accounts over several platforms), the Act and Rules set out the framework for a "Consent Manager," a service that will allow users to manage their data across several fiduciaries, similar to the permissions manager settings on a smartphone.

Data breaches must be reported as soon as possible, the Act says.

Fines for non-compliance for different parts of the law range from ₹10,000 to ₹250 crore.

**Are these requirements in force?**  
No. While over two years have gone by

since the Act was notified, the Ministry of Electronics and Information Technology (MeitY) has chosen to give firms up to 18 more months to comply. Some requirements, like having a DPO be appointed for large firms, goes into effect one year from now.

However, some parts of the Act have kicked into action – such as the DPBI's formation. The DPBI will oversee the Act's implementation and will be a subordinate office of the MeitY. The body will have four members.

Another part of the Act that goes live is the amendment to the Right to Information Act, 2005, which has been furiously resisted by digital rights and transparency groups alike.

### Why is the amendment controversial?

The 2023 Act amended Section 80(j) of the Right to Information Act, 2005, which allows citizens to request public information from government bodies. That section allowed government bodies to refuse requests for "personal information", but said that this exemption would not apply if there was a larger public interest in disclosing the information.

The DPDP Act removed that carve-out, allowing government organisations more discretion in what is and isn't personal information, and decline it even if doing so would be in the public interest. The 2023 law was not going to be in force – including this amendment – until the Union government notified it. Transparency activists, such as those belonging to the Mazdoor Kisan Shakti Sangathan (MKSS) and the National Campaign for the People's Right to Information (NCPRI), spent years (since the DPDP Act's 2022 draft was published) resisting this change.

But on Friday, the government disregarded that pushback, and specifically invoked its power to push the amendment through in the form of a notification. Another amendment, to the Information Technology Act, 2000, is not yet in force.

Organisations like the MKSS have worked with grassroots movements to get access to ration "muster rolls" and work order logbooks, allowing them to scrutinise public records for signs of graft and misspending. By implementing a broader definition to what constitutes as "personal information", they have argued, citizens may have no room to conduct such social audits. The amendment could also be used to shield powerful officials' misconduct, they have said. Nikhil Dey, an MKSS founding member, vowed that "[w]e the people" will fight back after the amendment went into force.

### THE GIST

The DPDP Act, 2023 is India's data protection law just as other major countries have their own data protection regimes.

Data principals are required to take "informed" consent from their users, and anyone whose data they collect, by giving a summary of what data they are collecting, and how they will use it.

The 2023 Act amended Section 8(1)(j) of the Right to Information Act, 2005, which allows citizens to request public information from government bodies.

## What are Digital Personal Data Protection Rules? डिजिटल व्यक्तिगत डेटा संरक्षण नियम क्या हैं?

- **The Digital Personal Data Protection Rules (DPDP), 2025 were notified this week, kicking off the formation of the Data Protection Board of India (DPBI), and the legal framework for safeguarding the data of Indians online.**
- **डिजिटल व्यक्तिगत डेटा संरक्षण नियम (DPDP), 2025 को इस सप्ताह अधिसूचित किया गया, जिसने भारत डेटा संरक्षण बोर्ड (DPBI) के गठन को शुरू किया, और भारतीयों के ऑनलाइन डेटा की सुरक्षा के लिए कानूनी ढांचे को।**
- **The DPDP Act itself was passed in Parliament in August 2023, and the draft of the Rules that were notified on November 14, 2025 were released for consultation in January. DPDP अधिनियम स्वयं अगस्त 2023 में संसद में पारित हुआ था, और 14 नवंबर 2025 को अधिसूचित किए गए नियमों का मसौदा जनवरी में परामर्श के लिए जारी किया गया था।**

### What do the DPDP Act and Rules do?

### DPDP अधिनियम और नियम क्या करते हैं?

- **The DPDP Act, 2023 is India's data protection law just as other major countries have their own data protection regimes such as that in Europe (the General Data Protection Regulation (GDPR)) and Singapore (Personal Data Protection Act, 2012). DPDP अधिनियम, 2023 भारत का डेटा संरक्षण कानून है ठीक वैसे ही जैसे अन्य प्रमुख देशों के पास अपने डेटा संरक्षण व्यवस्थाएं हैं जैसे यूरोप में (सामान्य डेटा संरक्षण विनियम (GDPR)) और सिंगापुर में (व्यक्तिगत डेटा संरक्षण अधिनियम, 2012)।**



- Like these regimes, the **Act** sets out some baselines for how companies (“**data fiduciaries**”) should handle data of their users in **India** (“**data principals**”). इन व्यवस्थाओं की तरह, अधिनियम कुछ आधारभूत मानदंड निर्धारित करता है कि कंपनियां (“**डेटा फिड्यूसियरी**”) अपने उपयोगकर्ताओं के भारत में डेटा (“**डेटा प्रिंसिपल**”) को कैसे संभालनी चाहिए।
- For instance, there must be **access control** and **encryption**, along with **security audits** for large firms (“**significant data fiduciaries**”). उदाहरण के लिए, पहुंच नियंत्रण और एन्क्रिप्शन होना चाहिए, साथ ही बड़े फर्मों (“**महत्वपूर्ण डेटा फिड्यूसियरी**”) के लिए सुरक्षा ऑडिट।
- Further, **data principals** are required to take “**informed**” consent from their users, and anyone whose data they collect, by giving a summary of what data they are collecting, and how they will use it. इसके अलावा, डेटा प्रिंसिपल को अपने उपयोगकर्ताओं से, और जिनके डेटा वे एकत्र करते हैं, से “सूचित” सहमति लेनी होगी, यह बताकर कि वे कौन सा डेटा एकत्र कर रहे हैं, और इसे कैसे उपयोग करेंगे।
- The **Act** also gives users the right to erase or modify data they provide to firms, or to delete it. अधिनियम उपयोगकर्ताओं को फर्मों को दिए गए डेटा को मिटाने या संशोधित करने, या इसे हटाने का अधिकार भी देता है।
- After a specified period of **inactivity**, firms are under an obligation to delete the data they have on users. एक निर्दिष्ट अवधि के निष्क्रियता के बाद, फर्मों पर उपयोगकर्ताओं पर उनके पास मौजूद डेटा को हटाने का दायित्व है।
- A **Data Protection Officer (DPO)** has to be appointed by large firms, who will oversee **compliance**. बड़ी फर्मों को एक डेटा संरक्षण अधिकारी (DPO) नियुक्त करना होगा, जो अनुपालन की निगरानी करेगा।
- The **Act** also restricts **targeted advertising** and certain data collection from **children**. अधिनियम लक्षित विज्ञापन और बच्चों से कुछ डेटा संग्रह को भी प्रतिबंधित करता है।
- The **Rules** carve out an exemption here for parents tracking their children’s **location**. नियम यहां माता-पिता को अपने बच्चों की स्थान ट्रैक करने के लिए एक छूट देते हैं।
- To allow users to exercise rights across a **variety of fiduciaries (accounts over several platforms)**, the **Act and Rules** set out the framework for a “**Consent Manager**,” a service that will allow users to manage their data across several fiduciaries, similar to the **permissions manager settings** on a **smartphone**.
- उपयोगकर्ताओं को विभिन्न फिड्यूसियरी (कई प्लेटफॉर्मों पर खाते) के पार अधिकारों का प्रयोग करने की अनुमति देने के लिए, अधिनियम और नियम एक “सहमति प्रबंधक” के लिए ढांचा निर्धारित करते हैं, एक सेवा जो उपयोगकर्ताओं को कई फिड्यूसियरी के पार अपने डेटा का प्रबंधन करने की अनुमति देगी, जो एक स्मार्टफोन पर अनुमतियां प्रबंधक सेटिंग्स के समान है।
- **Data breaches** must be reported as soon as possible, the **Act** says.
- डेटा उल्लंघन को जितनी जल्दी संभव हो रिपोर्ट करना चाहिए, अधिनियम कहता है।
- **Fines for non-compliance** for different parts of the law range from **₹10,000 to ₹250 crore**. कानून के विभिन्न भागों के लिए अनुपालन न करने पर जुर्माना ₹10,000 से ₹250 करोड़ तक है।

Are these requirements in force?

क्या ये आवश्यकताएं लागू हैं?

- No. नहीं।
- While over **two years** have gone by since the **Act** was notified, the **Ministry of Electronics and Information Technology (MeitY)** has chosen to give firms up to **18 more months** to comply.
- जबकि अधिनियम अधिसूचित होने के बाद दो वर्ष से अधिक बीत चुके हैं, इलेक्ट्रॉनिक्स और सूचना प्रौद्योगिकी मंत्रालय (MeitY) ने फर्मों को अनुपालन के लिए **18 महीने और** देने का विकल्प चुना है।
- Some requirements, like having a **DPO** be appointed for large firms, goes into effect **one year** from now. कुछ आवश्यकताएं, जैसे बड़े फर्मों के लिए **DPO** नियुक्त करना, एक वर्ष बाद प्रभाव में आएंगी।
- However, some parts of the **Act** have kicked into action — such as the **DPBI**’s formation. हालांकि, अधिनियम के कुछ भाग प्रभाव में आ चुके हैं — जैसे **DPBI** का गठन।
- The **DPBI** will oversee the **Act**’s implementation and will be a subordinate office of the **MeitY**. **DPBI** अधिनियम के कार्यान्वयन की निगरानी करेगा और **MeitY** का अधीनस्थ कार्यालय होगा।



- The body will have **four members**. यह निकाय चार सदस्यों का होगा।
- Another part of the **Act** that goes live is the amendment to the **Right to Information Act, 2005**, which has been furiously resisted by **digital rights** and **transparency groups** alike. अधिनियम का एक और भाग जो जीवित हो रहा है वह है सूचना का अधिकार अधिनियम, 2005 में संशोधन, जिसका डिजिटल अधिकारों और पारदर्शिता समूहों दोनों द्वारा कड़ी प्रतिरोध किया गया है।

## Why is the amendment controversial?

### संशोधन क्यों विवादास्पद है?

- The **2023 Act** amended **Section 8(1)(j)** of the **Right to Information Act, 2005**, which allows citizens to request public information from government bodies. **2023 अधिनियम** ने सूचना का अधिकार अधिनियम, 2005 की धारा 8(1)(j) में संशोधन किया, जो नागरिकों को सरकारी निकायों से सार्वजनिक जानकारी मांगने की अनुमति देता है।
- That section allowed government bodies to refuse requests for “**personal information**”, but said that this exemption would not apply if there was a larger **public interest** in disclosing the information.
- उस धारा ने सरकारी निकायों को “**व्यक्तिगत जानकारी**” के लिए अनुरोधों को अस्वीकार करने की अनुमति दी, लेकिन कहा कि यह छूट लागू नहीं होगी यदि जानकारी प्रकट करने में बड़ा सार्वजनिक हित हो।
- The **DPDP Act** removed that carve-out, allowing government organisations more discretion in what is and isn’t **personal information**, and decline it even if doing so would be in the **public interest**. **DPDP अधिनियम** ने उस छूट को हटा दिया, सरकारी संगठनों को यह तय करने में अधिक विवेक की अनुमति देते हुए कि क्या है और क्या नहीं **व्यक्तिगत जानकारी**, और इसे अस्वीकार करने की, भले ही ऐसा करना सार्वजनिक हित में हो।
- The **2023 law** was not going to be in force — including this amendment — until the **Union government** notified it.
- **2023 कानून** — इस संशोधन सहित — लागू नहीं होने वाला था जब तक **केंद्रीय सरकार** ने इसे अधिसूचित न करे।
- **Transparency activists**, such as those belonging to the **Mazdoor Kisan Shakti Sangathan (MKSS)** and the **National Campaign for the People’s Right to Information (NCPRI)**, spent years (since the **DPDP Act’s 2022 draft** was published) resisting this change.
- **पारदर्शिता कार्यकर्ता**, जैसे **मजदूर किसान शक्ति संगठन (MKSS)** और **राष्ट्रीय अभियान लोगों के सूचना का अधिकार (NCPRI)** से जुड़े, ने वर्षों (DPDP अधिनियम के 2022 मसौदे के प्रकाशन से) इस परिवर्तन का प्रतिरोध किया।
- But on **Friday**, the government disregarded that pushback, and specifically invoked its power to push the amendment through in the form of a **notification**.
- लेकिन **शुक्रवार** को, सरकार ने उस विरोध को नजरअंदाज कर दिया, और विशेष रूप से एक **अधिसूचना** के रूप में संशोधन को आगे बढ़ाने की अपनी शक्ति का उपयोग किया।
- Another amendment, to the **Information Technology Act, 2000**, is not yet in force.
- एक और संशोधन, **सूचना प्रौद्योगिकी अधिनियम, 2000** में, अभी तक लागू नहीं है।
- Organisations like the **MKSS** have worked with **grassroots movements** to get access to **ration “muster rolls”** and **work order logbooks**, allowing them to scrutinise public records for signs of **graft** and **misspending**.
- **MKSS** जैसी संगठनों ने घास की जड़ आंदोलनों के साथ काम किया है राशन “मस्टर रोल” और कार्य आदेश लॉगबुक तक पहुंच प्राप्त करने के लिए, जिससे उन्हें भ्रष्टाचार और गलत खर्च के संकेतों के लिए सार्वजनिक रिकॉर्ड की जांच करने की अनुमति मिली।
- By implementing a broader definition to what constitutes as “**personal information**”, they have argued, citizens may have no room to conduct such **social audits**. “**व्यक्तिगत जानकारी**” क्या बनाता है इसकी व्यापक परिभाषा लागू करके, उन्होंने तर्क दिया है, नागरिकों के पास ऐसी सामाजिक ऑडिट करने की कोई जगह नहीं हो सकती।
- The amendment could also be used to shield **powerful officials’ misconduct**, they have said. संशोधन का उपयोग **शक्तिशाली अधिकारियों** के **दुराचार** को ढालने के लिए भी किया जा सकता है, उन्होंने कहा।



- **Nikhil Dey**, an **MKSS** founding member, vowed that “we the people’ will fight back” after the amendment went into force. निखिल डे, एक **MKSS** संस्थापक सदस्य, ने प्रतिज्ञा की कि “हम लोग लड़ेंगे” संशोधन लागू होने के बाद।

## Decoding the NDA's landslide win in Bihar

Voters expressed a great deal of satisfaction with the incumbent government and reported notable improvements in public services and infrastructure

GS II: Polity, Election

### DATA POINT

Sanjay Kumar

Many factors contribute to the landslide victory of a political party or an alliance. This holds true for the recent victory of the National Democratic Alliance (NDA) in Bihar as well. The victory conveys two messages – that there was an overall approval of the work done by the incumbent NDA government under Chief Minister Nitish Kumar, and of the voters’ continued faith in the promises made by the NDA during its campaign. The results also point to the vital role of women voters in Indian elections. Not only did women voters turn out to vote in much larger numbers in 2025 as compared to all the previous elections, but they also seemed to have voted decisively in favour of the NDA, giving the alliance a significant lead.

### The results

These results are a major setback for the Mahagatbandhan (MGB). But despite a rout in terms of seats, the Rashtriya Janata Dal (RJD) emerged as the single largest party in terms of votes polled. RJD leader Tejashwi Yadav led the campaign from the front. He managed to consolidate his core voters – mainly Yadavs and Muslims – but failed to attract voters from other communities.

Prashant Kishor’s Jan Suraj Party (JSP) party polled just over 3% of the votes. However, one should credit Mr. Kishor for leading the campaign on the issue of job opportunities for residents in Bihar, rather than on the issue of migration of labour to industries outside Bihar. This message later resonated in the campaigns of other parties. The JSP appeared to attract large crowds and generated significant buzz. This created the popular perception that Bihar was heading for a three-cornered con-



NDA supporters hold posters of Prime Minister Narendra Modi, Chief Minister Nitish Kumar, and other leaders, in Patna. ANI

test. However, the contest was essentially a bipolar one, as was the case in previous elections.

The NDA won 202 seats and polled 46.6% of the votes, while the MGB managed to win 35 seats with 37.7% of the votes. This is the second best performance of the NDA; in the 2010 Assembly elections, it won 206 seats. Together, the two alliances polled roughly 85% of the vote, with other parties receiving a much smaller share compared to earlier elections.

A large number of voters made up their mind about which party to vote for during the last few days of the campaign. Evidence from a survey suggests that 42% were late deciders, choosing who to vote for one or two days before voting or on the day of voting. Most of these late deciders voted either for the NDA (47%) or for the MGB (36%), while the JSP (3%) was not seen as a party that was likely to win or play a role in government formation.

### Success of the NDA campaign

The NDA’s strategy of pitching its election campaign on large, State-level issues rather than on local is-

ues seems to have helped it in a big way. The NDA campaigned on the need for a double engine *sarkaar* (Nitish-Modi government) for faster development of the State. About half of the voters in Bihar believed it was necessary for the party in power at the Centre to also be in power in the State, while a little over one-third (37%) did not agree with this view. The NDA conveyed the message that this election was not about electing an MLA or Chief Minister, but to ensure that Bihar moves ahead on the path of development. It also warned the voters that if the MGB won, it could result in a return to ‘Jungle Raj’ – a reference to the poor law-and-order situation between 1990 and 2005 during Lalu Prasad and Rabri Devi’s leadership. This message seems to have appealed to a large segment of voters, especially women, who faced major challenges on account of the poor law-and-order situation.

### Countering anti-incumbency

One major reason why the NDA government was able to overcome anti-incumbency was the high level of voter satisfaction with both

the State and Central governments. Data show that nearly three-fourths of voters expressed satisfaction with the performance of both, creating a favourable environment for the NDA’s campaign.

Voters also reported notable improvements across key public services and infrastructure. More than three-fourths of the respondents said that the availability of electricity had improved, and nearly seven of every 10 believed that the conditions of roads had improved. They also said that there were improvements in social sector services. More than six of every 10 voters felt that the condition of government schools had improved, and a similar share reported better access to drinking water. A little over half (54%) believed that government hospitals were functioning better, while nearly half the respondents (48%) perceived an improvement in law and order. Crucially, more than three out of every five voters said they wanted to give the Janata Dal (United) or JD(U)-led NDA government another chance in Bihar.

The welfare schemes specifically targeting women also seem to

have helped the NDA in mobilising women voters in bigger numbers in 2025 as compared to previous elections. Women had supported Mr. Kumar in earlier elections as well, due to his policy of *sharab bandi* (alcohol prohibition), policy of giving cycles and school uniforms to schoolgirls, and the Jeevika Didi scheme. Initial evidence suggests that women voters seem to have played an important role in NDA’s victory.

The MGB was unable to generate confidence among voters of its ability to provide better governance if elected. It also appeared much weaker than the NDA in mobilising support. While in the NDA, alliance partners drew voters from different castes and communities, the MGB largely reinforced support within its existing base and failed to bring in additional voters. Within the NDA, the Bharatiya Janata Party (BJP) attracted a large chunk of upper caste voters, the JD (U) brought in Kauri voters, Upendra Kushwaha’s Rashtriya Lok Samta Party (RLSP) was instrumental in securing Koeri votes, and both the Hindustaan Awaam Morcha and the Lok Jan Shakti Party (R) attracted a large segment of Dalit voters.

It is important to note that the core base of the MGB was much smaller than that of the NDA. The alliance partners in the MGB – mainly the RJD, Congress, Vikasseel Insaan Party, and the Left parties – more or less have the same core support base, which includes Yadavs, Muslims, and poorer segment of voters. While the alliance of these parties helped in consolidating the core supporters of the MGB, it appeared unable to attract non-committed voters. Evidence suggests that over seven of every 10 (70%) of Yadavs and Muslims voted for the MGB in this election. But the alliance failed to win over voters of other communities.

Sanjay Kumar is a professor and political analyst. Views expressed are personal

## Decoding the NDA's landslide win in Bihar बिहार में एनडीए की भारी जीत का विश्लेषण

- Decoding the NDA's landslide win in Bihar  
बिहार में एनडीए की भारी जीत का विश्लेषण
- Voters expressed a great deal of satisfaction with the incumbent government and reported notable improvements in public services and infrastructure  
मतदाताओं ने वर्तमान सरकार से बड़ी संतुष्टि व्यक्त की और सार्वजनिक सेवाओं तथा बुनियादी ढांचे में उल्लेखनीय सुधार की रिपोर्ट क
- Many factors contribute to the landslide victory of a political party or an alliance. कई कारक एक





राजनीतिक दल या गठबंधन की भूखलन जीत में योगदान देते हैं।

- This holds true for the recent victory of the **National Democratic Alliance (NDA)** in Bihar as well. यह बिहार में हाल की राष्ट्रीय जनतांत्रिक गठबंधन (NDA) की जीत के लिए भी सही है।
- The victory conveys **two messages** — that there was an overall **approval** of the work done by the incumbent **NDA government** under **Chief Minister Nitish Kumar**, and of the voters' continued **faith** in the promises made by the **NDA** during its campaign. यह जीत दो संदेश देती है — कि वर्तमान **NDA सरकार** के **मुख्यमंत्री नीतीश कुमार** के तहत किए गए कार्यों की समग्र मंजूरी थी, और मतदाताओं का **NDA** द्वारा अभियान के दौरान दिए गए वादों में निरंतर विश्वास।
- The results also point to the **vital role of women voters in Indian elections**. परिणाम भारतीय चुनावों में महिला मतदाताओं की महत्वपूर्ण भूमिका की ओर भी इशारा करते हैं।
- Not only did **women voters** turn out to vote in much larger numbers in **2025** as compared to all the previous elections, but they also seemed to have voted **decisively** in favour of the **NDA**, giving the alliance a **significant lead**. न केवल महिला मतदाताओं ने **2025** में सभी पिछली चुनावों की तुलना में बहुत बड़ी संख्या में मतदान किया, बल्कि उन्होंने **NDA** के पक्ष में निर्णायक रूप से मतदान किया प्रतीत होता है, गठबंधन को उल्लेखनीय बढ़त देकर।

## The results

### परिणाम

- These results are a **major setback** for the **Mahagatbandhan (MGB)**. ये परिणाम महागठबंधन (MGB) के लिए एक प्रमुख झटका हैं।
- But despite a rout in terms of **seats**, the **Rashtriya Janata Dal (RJD)** emerged as the **single largest party in terms of votes polled**. लेकिन सीटों के संदर्भ में हार के बावजूद, राष्ट्रीय जनता दल (RJD) मतों के संदर्भ में एकमात्र सबसे बड़ी पार्टी के रूप में उभरा।
- **RJD leader Tejashwi Yadav** led the campaign from the front. **RJD नेता तेजस्वी यादव** ने अभियान को आगे से नेतृत्व दिया।
- He managed to consolidate his **core voters** — mainly **Yadavs and Muslims** — but failed to attract voters from other communities. उसने अपने मुख्य मतदाताओं — मुख्य रूप से यादवों और मुस्लिमों — को एकजुट करने में सफलता पाई, लेकिन अन्य समुदायों से मतदाताओं को आकर्षित करने में विफल रहा।
- **Prashant Kishor's Jan Suraaj Party (JSP)** party polled just over **3% of the votes**. प्रशांत किशोर की जन सुराज पार्टी (JSP) ने केवल 3% से अधिक मत हासिल किए।
- However, one should credit **Mr. Kishor** for leading the campaign on the issue of **job opportunities** for residents in **Bihar**, rather than on the issue of **migration** of labour to industries outside **Bihar**. हालांकि, श्री किशोर को श्रेय देना चाहिए कि उन्होंने बिहार के निवासियों के लिए नौकरी के अवसरों के मुद्दे पर अभियान का नेतृत्व किया, न कि बिहार के बाहर उद्योगों में श्रमिकों के प्रवास के मुद्दे पर।
- This message later resonated in the campaigns of other parties. यह संदेश बाद में अन्य दलों के अभियानों में गूँजा।
- The **JSP** appeared to attract **large crowds** and generated **significant buzz**. **JSP** ने बड़ी भीड़ आकर्षित करने का प्रतीत हुआ और उल्लेखनीय हलचल पैदा की।
- This created the popular perception that **Bihar** was heading for a **three-cornered contest**. इसने लोकप्रिय धारणा पैदा की कि बिहार एक तीन-कोने वाले मुकाबले की ओर बढ़ रहा था।
- However, the contest was essentially a **bipolar** one, as was the case in previous elections. हालांकि, मुकाबला मूल रूप से द्विध्रुवीय था, जैसा कि पिछली चुनावों में मामला था।
- The **NDA** won **202 seats** and polled **46.6% of the votes**, while the **MGB** managed to win **35 seats with 37.7% of the votes**. **NDA** ने 202 सीटें जीतीं और 46.6% मत हासिल किए, जबकि **MGB** ने 37.7% मतों के साथ 35 सीटें जीतीं।
- This is the **second best performance** of the **NDA**; in the **2010 Assembly elections**, it won **206 seats**.
- यह **NDA** का दूसरा सर्वश्रेष्ठ प्रदर्शन है; 2010 विधानसभा चुनावों में, इसने 206 सीटें जीती थीं।
- Together, the two alliances polled roughly **85%** of the vote, with other parties receiving a much smaller share compared to earlier elections.



- साथ में, दो गठबंधनों ने लगभग **85%** वोट हासिल किए, अन्य दलों को पहले के चुनावों की तुलना में बहुत छोटा हिस्सा मिला।
- A large number of voters made up their mind about which party to vote for during the **last few days** of the campaign.
- अभियान के **अंतिम कुछ दिनों** के दौरान बड़ी संख्या में मतदाताओं ने यह तय किया कि किस दल को वोट दें।
- Evidence from a survey suggests that **42% were late deciders, choosing who to vote for one or two days before voting or on the day of voting**. एक सर्वेक्षण के साक्ष्य सुझाते हैं कि **42% देर से फैसला करने वाले** थे, जो मतदान से एक या दो दिन पहले या मतदान के दिन वोट किसे दें यह चुनते थे।
- Most of these **late deciders** voted either for the **NDA (47%)** or for the **MGB (36%)**, while the **JSP (3%)** was not seen as a party that was likely to win or play a role in government formation. इन **देर से फैसला करने वालों** में से अधिकांश ने या तो **NDA (47%)** के लिए या **MGB (36%)** के लिए मतदान किया, जबकि **JSP (3%)** को जीतने या सरकार गठन में भूमिका निभाने वाली पार्टी के रूप में नहीं देखा गया।

## Success of the NDA campaign

### NDA अभियान की सफलता

- The **NDA's** strategy of pitching its election campaign on **large, State-level issues** rather than on **local issues** seems to have helped it in a big way. **NDA** की रणनीति जो अपने चुनाव अभियान को **स्थानीय मुद्दों** के बजाय **बड़े, राज्य-स्तरीय मुद्दों** पर केंद्रित करने की थी, ने इसे बड़ी तरीके से मदद की प्रतीत होती है।
- The **NDA** campaigned on the need for a **double engine sarkaar (Nitish-Modi government)** for faster **development** of the **State**. **NDA** ने राज्य के तेज **विकास** के लिए **डबल इंजन सरकार (नीतीश-मोदी सरकार)** की आवश्यकता पर अभियान चलाया।
- About **half** of the voters in **Bihar** believed it was necessary for the party in power at the **Centre** to also be in power in the **State**, while a little over **one-third (37%)** did not agree with this view. **बिहार** के लगभग **अधिकांश** मतदाताओं का मानना था कि **केंद्र** में सत्ता में पार्टी का **राज्य** में भी सत्ता में होना आवश्यक है, जबकि थोड़ा अधिक **एक-तिहाई (37%)** इस दृष्टिकोण से सहमत नहीं थे।
- The **NDA** conveyed the message that this election was not about electing an **MLA** or **Chief Minister**, but to ensure that **Bihar** moves ahead on the path of **development**.
- **NDA** ने संदेश दिया कि यह चुनाव एक **MLA** या **मुख्यमंत्री** चुनने का नहीं था, बल्कि यह सुनिश्चित करने का था कि **बिहारविकास** के पथ पर आगे बढ़े।
- It also warned the voters that if the **MGB** won, it could result in a return to '**Jungle Raj**' — a reference to the poor **law-and-order situation** between **1990 and 2005** during **Lalu Prasad and Rabri Devi's leadership**.
- इसने मतदाताओं को चेतावनी भी दी कि यदि **MGB** जीत गया, तो यह '**जंगल राज**' की वापसी हो सकती है — **लालू प्रसाद** और **राबड़ी देवी** के नेतृत्व में **1990** और **2005** के बीच खराब **कानून-व्यवस्था की स्थिति** का संदर्भ।
- This message seems to have appealed to a **large segment** of voters, especially **women**, who faced major challenges on account of the poor **law-and-order situation**.
- यह संदेश मतदाताओं के एक **बड़े वर्ग**, विशेष रूप से **महिलाओं** को आकर्षित करने में सफल रहा प्रतीत होता है, जो खराब **कानून-व्यवस्था की स्थिति** के कारण प्रमुख चुनौतियों का सामना कर रही थीं।

## Countering anti-incumbency

### वर्तमान सरकार विरोधी भावना का मुकाबला

- One major reason why the **NDA government** was able to overcome **anti-incumbency** was the high level of **voter satisfaction** with both the **State** and **Central governments**. **NDA सरकार** के **वर्तमान सरकार विरोधी भावना** पर काबू पाने का एक प्रमुख कारण **राज्य और केंद्रीय सरकारों** दोनों के साथ **मतदाता संतुष्टि** का उच्च स्तर था।



- Data show that nearly **three-fourths** of voters expressed **satisfaction** with the performance of both, creating a favourable environment for the **NDA's** campaign. आंकड़े दिखाते हैं कि लगभग **तीन-चौथाई** मतदाताओं ने दोनों के प्रदर्शन से **संतुष्टि** व्यक्त की, जो **NDA** के अभियान के लिए अनुकूल वातावरण बनाता है।
- Voters also reported **notable improvements across key public services and infrastructure**. मतदाताओं ने प्रमुख **सार्वजनिक सेवाओं** और **बुनियादी ढांचे** में उल्लेखनीय **सुधारों** की भी रिपोर्ट की।
- More than three-fourths** of the respondents said that the availability of **electricity** had improved, and nearly **seven of every 10** believed that the conditions of **roads** had improved. उत्तरदाताओं के **तीन-चौथाई से अधिक** ने कहा कि **विद्युत** की उपलब्धता में सुधार हुआ है, और लगभग **हर 10 में से सात** का मानना था कि **सड़कों** की स्थिति में सुधार हुआ है।
- They also said that there were improvements in **social sector services**.
- उन्होंने यह भी कहा कि **सामाजिक क्षेत्र सेवाओं** में सुधार हुए हैं।
- More than **six of every 10** voters felt that the condition of **government schools** had improved, and a similar share reported better access to **drinking water**.
- हर 10 में से छह से अधिक** मतदाताओं का महसूस था कि **सरकारी स्कूलों** की स्थिति में सुधार हुआ है, और समान हिस्से ने **पीने के पानी** तक बेहतर पहुंच की रिपोर्ट की।
- A little over **half (54%)** believed that **government hospitals** were functioning better, while nearly **half** the respondents (**48%**) perceived an improvement in **law and order**. थोड़ा अधिक **अधिकांश (54%)** का मानना था कि **सरकारी अस्पताल** बेहतर कार्य कर रहे हैं, जबकि लगभग **अधिकांश** उत्तरदाताओं (**48%**) ने **कानून और व्यवस्था** में सुधार का अनुभव किया।
- Crucially, more than **three out of every five** voters said they wanted to give the **Janata Dal (United)** or **JD(U)-led NDA government** another chance in **Bihar**. महत्वपूर्ण रूप से, **हर पाँच में से तीन से अधिक** मतदाताओं ने कहा कि वे **जनता दल (यूनाइटेड)** या **JD(U)-नेतृत्व वाली NDA सरकार** को **बिहार** में एक और मौका देना चाहते हैं।
- The **welfare schemes** specifically targeting **women** also seem to have helped the **NDA** in mobilising **women voters** in bigger numbers in **2025** as compared to previous elections. **महिलाओं** को लक्षित करने वाली **कल्याण योजनाएं** ने भी **NDA** को **2025** में पिछली चुनावों की तुलना में बड़ी संख्या में **महिला मतदाताओं** को जुटाने में मदद की प्रतीत होती है।
- Women** had supported **Mr. Kumar** in earlier elections as well, due to his policy of **sharab bandi (alcohol prohibition)**, policy of giving **cycles** and **school uniforms** to **schoolgirls**, and the **Jeevika Didi scheme**. **महिलाएं** ने पहले के चुनावों में भी **श्री कुमार** का समर्थन किया था, उनकी **शराब बंदी (शराब निषेध)** नीति, **स्कूलगर्ल्स** को **साइकिल** और **स्कूल यूनिफॉर्म** देने की नीति, और **जीविका दीदी योजना** के कारण।
- Initial evidence suggests that **women voters** seem to have played an **important role** in **NDA's** victory. प्रारंभिक साक्ष्य सुझाते हैं कि **महिला मतदाताओं** ने **NDA** की जीत में **महत्वपूर्ण भूमिका** निभाई प्रतीत होती है।
- The **MGB** was unable to generate **confidence** among voters of its ability to provide better **governance** if elected. **MGB** मतदाताओं के बीच अपनी क्षमता पर **विश्वास** उत्पन्न करने में असमर्थ रही कि यदि चुनी गई तो बेहतर **शासन** प्रदान करेगी।
- It also appeared much weaker than the **NDA** in mobilising support. यह समर्थन जुटाने में **NDA** की तुलना में बहुत कमजोर प्रतीत हुई।
- While in the NDA, alliance partners drew voters from different castes and communities, the MGB largely reinforced support within its existing base and failed to bring in additional voters.**
- जबकि **NDA** में, गठबंधन साझेदार **विभिन्न जातियों** और **समुदायों** से मतदाताओं को आकर्षित करते थे, **MGB** ने मुख्य रूप से अपनी **मौजूदा आधार** के भीतर समर्थन को मजबूत किया और **अतिरिक्त मतदाताओं** को लाने में विफल रहा।
- Within the NDA, the Bharatiya Janata Party (BJP) attracted a large chunk of upper caste voters, the JD (U) brought in Kurmi votes, Upendra Kushwaha's Rashtriya Lok Samta Party (RLSP) was instrumental in securing Koeri votes, and both the Hindustaan Awaam Morcha and the Lok Jan Shakti Party (R) attracted a large segment of Dalit votes.**
- NDA** के भीतर, **भारतीय जनता पार्टी (BJP)** ने **उच्च जाति मतदाताओं** का एक बड़ा हिस्सा आकर्षित किया, **JD (U)** ने **कुर्मी मत** लिए, **उपेंद्र कुशवाहा** की **राष्ट्रीय लोक समता पार्टी (RLSP)** कोइरी मत सुरक्षित करने में



महत्वपूर्ण थी, और हिंदुस्तान आवाज मोर्चा और लोक जनशक्ति पार्टी (R) दोनों ने दलित मतों का एक बड़ा वर्ग आकर्षित किया।

- It is important to note that the **core base** of the **MGB** was much smaller than that of the **NDA**. यह नोट करना महत्वपूर्ण है कि **MGB** का **मुख्य आधार** **NDA** के मुकाबले बहुत छोटा था।
- The alliance partners in the **MGB** — mainly the **RJD, Congress, Vikasheel Insaan Party, and the Left parties** — more or less have the same **core support base**, which includes **Yadavs, Muslims, and poorer segment of voters**.
- **MGB** में गठबंधन साझेदार — मुख्य रूप से **RJD, कांग्रेस, विकसशील इंसान पार्टी, और वामपंथी दल** — अधिक या कम एक ही **मुख्य समर्थन आधार** रखते हैं, जिसमें **यादव, मुस्लिम, और मतदाताओं का गरीब वर्ग** शामिल है।
- While the alliance of these parties helped in consolidating the **core supporters** of the **MGB**, it appeared unable to attract **non-committed voters**. इन दलों के गठबंधन ने **MGB** के **मुख्य समर्थकों** को एकजुट करने में मदद की, लेकिन यह **गैर-प्रतिबद्ध मतदाताओं** को आकर्षित करने में असमर्थ प्रतीत हुआ।
- Evidence suggests that over **seven of every 10 (70%)** of **Yadavs and Muslims** voted for the **MGB** in this election. साक्ष्य सुझाते हैं कि इस चुनाव में **हर 10 में से सात से अधिक (70%) यादवों और मुस्लिमों** ने **MGB** को वोट दिया।
- But the alliance failed to win over voters of **other communities**. लेकिन गठबंधन **अन्य समुदायों** के मतदाताओं को जीतने में विफल रहा।

## International Relations

17/11/2025

# Jaishankar, Qatar PM discuss bilateral cooperation

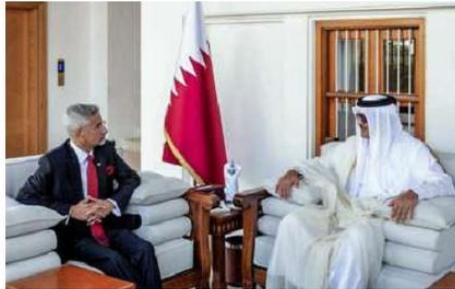
GS II: IR: West Asia  
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External Affairs Minister S. Jaishankar on Sunday met Qatar's top leadership in Doha and discussed major aspects of the bilateral relationship, including energy and trade, as well as regional and global issues.

He held a meeting with Prime Minister and Foreign Minister Mohammed bin Abdulrahman bin Jassim Al Thani, and also called on Qatar's Amir Tamim bin Hamad Al Thani.

"Pleased to meet Qatar's Prime Minister & Foreign Minister @MBA\_AlThani in Doha," Mr. Jaishankar said in an X post.

"Reviewed key aspects of our Strategic Partner-



S. Jaishankar meets Qatar's PM and Foreign Minister Mohammed bin Abdulrahman bin Jassim Al Thani, in Doha on Sunday. ANI

ship, including energy, trade, investment and people-to-people connect. Appreciate the exchange of views on Middle East/West Asia, regional and global developments," he said.

According to the state-

run Qatar News Agency, the two counterparts also discussed ways to strengthen bilateral cooperation.

### India-Qatar relations

Mr. Jaishankar also called on Qatar's Amir Tamim bin

Hamad Al Thani and "reiterated our commitment to stronger India-Qatar relations", the Minister said in a separate post on X.

"Value his guidance on expanding collaboration and exploring new opportunities," Mr. Jaishankar said.

India's bilateral trade with Qatar in 2023-24 was \$14.08 billion, according to the Ministry of External Affairs.

### To meet Lavrov

Mr. Jaishankar is also scheduled to meet his Russian counterpart, Sergei Lavrov, in Moscow on Monday to discuss bilateral ties ahead of President Vladimir Putin's visit to New Delhi next month.

According to Russian Foreign Ministry spokeswoman Maria Zakharova, Mr. Jaishankar is arriving to lead the Indian delegation at the meeting of the Council of Prime Ministers of the Shanghai Cooperation Organisation (SCO) on Tuesday.

Pakistan, also a member of the SCO, will be represented by Deputy Prime Minister and Foreign Minister Mohammad Ishaq Dar. However, according to sources, there is no provision for his bilateral meeting with Mr. Jaishankar.

According to Kremlin sources, Mr. Putin is scheduled to meet the leaders of the SCO, hosted by Russian Prime Minister Mikhail Mishustin.

## Jaishankar, Qatar PM discuss bilateral cooperation जयशंकर, क़तर के प्रधानमंत्री ने द्विपक्षीय सहयोग पर चर्चा की

- **Jaishankar, Qatar PM discuss bilateral cooperation**  
जयशंकर, क़तर के प्रधानमंत्री ने द्विपक्षीय सहयोग पर चर्चा की
- External Affairs Minister S. Jaishankar on Sunday met Qatar's top leadership in Doha and discussed major aspects of the bilateral relationship, including energy and trade, as well as regional and global issues.



रविवार को विदेश मंत्री एस. जयशंकर ने दोहा में क़तर के शीर्ष नेतृत्व से मुलाकात की और द्विपक्षीय संबंधों के महत्वपूर्ण पहलुओं, जैसे कि ऊर्जा, व्यापार, तथा क्षेत्रीय और वैश्विक मुद्दों पर चर्चा की।

- He held a meeting with Prime Minister and Foreign Minister **Mohammed bin Abdulrahman bin Jassim Al Thani**, and also called on Qatar's **Amir Tamim bin Hamad Al Thani**.

उन्होंने प्रधानमंत्री एवं विदेश मंत्री मोहम्मद बिन अब्दुलटमान बिन जसिम अल थानी से मुलाकात की और क़तर के अमीर तमीम बिन हमद अल थानी से भी भेंट की।

- "Pleased to meet Qatar's Prime Minister & Foreign Minister @MBA\_AlThani\_ in Doha," Mr. Jaishankar said in an X post.  
"दोहा में क़तर के प्रधानमंत्री व विदेश मंत्री @MBA\_AlThani\_ से मिलकर प्रसन्नता हुई," श्री जयशंकर ने अपने X पोस्ट में लिखा।
- "Reviewed key aspects of our **Strategic Partnership**, including **energy, trade, investment** and **people-to-people connect**. Appreciate the exchange of views on **Middle East/West Asia**, regional and global developments," he said.  
"हमारी रणनीतिक साझेदारी के प्रमुख पहलुओं—ऊर्जा, व्यापार, निवेश, और जन-से-जन संपर्क—की समीक्षा की। मध्य पूर्व/पश्चिम एशिया, क्षेत्रीय एवं वैश्विक विकास पर विचार-विमर्श की सराहना करता हूँ," उन्होंने कहा।
- According to the **state-run Qatar News Agency**, the two counterparts also discussed ways to strengthen bilateral cooperation.  
**सरकारी क़तर न्यूज़ एजेंसी** के अनुसार, दोनों प्रतिनिधियों ने द्विपक्षीय सहयोग को मज़बूत करने के तरीकों पर भी चर्चा की।

## India-Qatar relations

### भारत-क़तर संबंध

- Mr. Jaishankar also called on Qatar's Amir Tamim bin Hamad Al Thani and "reiterated our commitment to stronger India-Qatar relations", the Minister said in a separate post on X.  
श्री जयशंकर ने क़तर के अमीर तमीम बिन हमद अल थानी से भी भेंट की और "भारत-क़तर संबंधों को और मज़बूत करने की हमारी प्रतिबद्धता दोहराई," मंत्री ने X पर एक अलग पोस्ट में कहा।
- "Value his guidance on expanding collaboration and exploring new opportunities," Mr. Jaishankar said.  
"सहयोग को विस्तारित करने और नए अवसरों की तलाश में उनके मार्गदर्शन को महत्व देता हूँ," श्री जयशंकर ने कहा।
- India's bilateral trade with Qatar in 2023-24 was **\$14.08 billion**, according to the Ministry of External Affairs.  
विदेश मंत्रालय के अनुसार, 2023-24 में भारत का क़तर के साथ द्विपक्षीय व्यापार **14.08 बिलियन डॉलर** था।

## To meet Lavrov

### लावरोव से मिलने के लिए

- Mr. Jaishankar is also scheduled to meet his Russian counterpart, **Sergei Lavrov**, in Moscow on Monday to discuss bilateral ties ahead of President **Vladimir Putin's** visit to New Delhi next month.  
श्री जयशंकर सोमवार को मॉस्को में अपने रूसी समकक्ष **सर्गेई लावरोव** से मिलने वाले हैं, ताकि अगले महीने **व्लादिमीर पुतिन** की नई दिल्ली यात्रा से पहले द्विपक्षीय संबंधों पर चर्चा की जा सके।
- According to Russian Foreign Ministry spokeswoman **Maria Zakharova**, Mr. Jaishankar is arriving to lead the Indian delegation at the meeting of the **Council of Prime Ministers of the Shanghai Cooperation Organisation (SCO)** on Tuesday.  
रूसी विदेश मंत्रालय की प्रवक्ता **मारिया ज़ाखारोवा** के अनुसार, श्री जयशंकर मंगलवार को **शंघाई सहयोग संगठन (SCO) के प्रधानमंत्रियों की परिषद** की बैठक में भारतीय प्रतिनिधिमंडल का नेतृत्व करने के लिए पहुंच रहे हैं।



- **Pakistan**, also a member of the SCO, will be represented by Deputy Prime Minister and Foreign Minister **Mohammad Ishaq Dar**. However, according to sources, there is no provision for his bilateral meeting with Mr. Jaishankar.  
**पाकिस्तान**, जो SCO का सदस्य है, का प्रतिनिधित्व उप प्रधानमंत्री और विदेश मंत्री **मोहम्मद इसहाक डार** करेंगे। हालांकि, सूत्रों के अनुसार, उनकी श्री जयशंकर के साथ किसी द्विपक्षीय मुलाकात का प्रावधान नहीं है।
- According to **Kremlin sources**, Mr. Putin is scheduled to meet the leaders of the SCO, hosted by Russian Prime Minister **Mikhail Mishustin**.  
**क्रेमलिन सूत्रों** के अनुसार, श्री पुतिन SCO के नेताओं से मिलने वाले हैं, जिसकी मेजबानी रूसी प्रधानमंत्री **मिखाइल मिशुस्तिन** करेंगे।

<b>GS Paper III: Economy, S&amp;T, Environment, DM, &amp;IS</b>	
<b>TOPICS COVERED</b>	<b>17_11_2025</b>
	<b>Economy</b>
1.	<b>The case for domestic ship building</b> घरेलू जहाज़ निर्माण के पक्ष में मामला
	<b>S&amp;T</b>
2.	<b>Surprise: reading a quantum clock can cost more than keeping it ticking</b> आश्चर्य: एक क्वांटम घड़ी को पढ़ना उसे चलते रखने से अधिक महंगा पड़ सकता है
3.	<b>Astronomers spot coronal mass ejection on another star for first time</b> खगोलविदों ने पहली बार किसी अन्य तारे पर कोरोनल मास इजेक्शन देखा
4.	<b>Swing, but do not miss</b> स्विंग करें, लेकिन चूकें नहीं
5.	<b>How is the global precision medicine market shaping up?</b> वैश्विक प्रिसीजन मेडिसिन बाज़ार कैसे विकसित हो रहा है?
	<b>Environment</b>
6.	<b>India to spruce up mechanisms for accessing climate finance</b> भारत जलवायु फाइनेंस तक पहुँचने के तंत्रों को सुदृढ़ करने जा रहा है
7.	<b>The case for domestic ship building</b> घरेलू जहाज़ निर्माण के पक्ष में मामला



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8.	<b>An uncertain solar-powered future</b> एक अनिश्चित सौर-ऊर्जा आधारित भविष्य
	<b>IS</b>
9.	<b>Army sets up three new garrisons near the strategic Siliguri Corridor</b> सेना ने सामरिक सिलीगुड़ी कॉरिडोर के पास तीन नए गैरीसन स्थापित किए

**Economy**

17/11/2025

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## The case for domestic ship building



**Big league:** CSL eyes doubling turnover as India eyes strong presence in global shipbuilding. BY ARRANGEMENT

V. Sajeew Kumar

As the world's largest importer of oil, gas, coal, and fertilisers, India presents vast opportunities for its shipping industry – yet much of the business remains under foreign control. Last year, shipping requirement was pegged at \$85 billion, with nearly 85% of cargo transported by foreign vessels. This dependence, warns Cochin Shipyard Ltd. Chairman and Managing Director Madhu S. Nair, poses a serious risk as any global shipping disruption could send ripples through the Indian economy.

Mr. Nair believes India must build a robust shipping ecosystem to meet its growing maritime requirements. Shipping, he notes, has a cascading impact on the economy, driving growth across sectors. A comprehensive development of the sector would enable India to supply a wide range of goods to global markets. A vibrant maritime and shipbuilding space is now taking shape in the country to serve the expanding trade. Ship manufacturing, Mr. Nair adds, will energise overall economic activity and act as a powerful labour multiplier.

To strengthen its shipping industry, the government has launched several initiatives to support domestic shipbuilding. The announcement of a ₹70,000 crore package for the shipbuilding and maritime sector is aimed at propelling India into the global top 10 by 2030 and the top five by 2047.

The package envisages a four-pillar approach to enhance domestic shipbuilding capacity and maritime infrastructure: facilitate long-term financing; promote greenfield and brownfield shipyard development; enhance technical capabilities; and undertake legal, taxation and policy reforms.

During the recently concluded Maritime India Week, in a major boost to the 'Make in India' initiative, public sector oil and gas companies placed 59 shipbuilding orders worth ₹47,800 crore. Shipping Corporation of India announced plans to expand its fleet to 216 vessels and Dredging Corporation of India said it plans to add 11 new dredgers. The Green Tug Transition Programme (GTTP) aims to generate a fleet of 100 eco-friendly tugboats by 2040.

"If the shipping requirement is mapped for the long term – at least 15 years from now – then the shipbuilding ecosystem can develop accordingly," he said.

He recalled how Japan's efforts to encourage shipbuilding after the Second World War brought prosperity to the country.

Today, three countries – China, Korea and Japan – together control 93% of the world's shipbuilding business. On the other hand, India – with 1/6th of the world's population and aspiring to be the third largest economy – accounts for barely 0.5% of the global shipbuilding business.

Several coastal states in India are now coming out with special policies covering ancillary and skilling support, roads and rail infrastructure, and so on to meet the country's shipping requirements.

States such as Tamil Nadu, Maharashtra, Andhra Pradesh, Odisha and Gujarat are pitching strongly.

(The writer is with The Hindu businessline)

## The case for domestic ship building घरेलू जहाज़ निर्माण के पक्ष में मामला

### The case for domestic ship building घरेलू जहाज़ निर्माण के पक्ष में मामला

• As the world's largest importer of **oil, gas, coal, and fertilisers**, India presents vast opportunities for its shipping industry — yet much of the business remains under foreign control.

दुनिया के सबसे बड़े **तेल, गैस, कोयला और उर्वरक** आयातक के रूप में, भारत अपनी शिपिंग उद्योग के लिए विशाल अवसर प्रस्तुत करता है — फिर भी इसका बड़ा हिस्सा विदेशी नियंत्रण में है।

• Last year, shipping requirements were pegged at **\$85 billion**, with nearly **85% of cargo transported by foreign vessels**.

पिछले वर्ष, शिपिंग आवश्यकता **85 बिलियन डॉलर** आंकी गई थी, जिसमें लगभग **85% कार्गो** विदेशी जहाज़ों द्वारा परिवहन किया गया।

• This dependence, warns **Cochin Shipyard Ltd. Chairman and Managing Director Madhu S. Nair**, poses a serious risk as any global shipping disruption could send ripples through the Indian economy.

**कोचीन शिपयार्ड लिमिटेड के चेयरमैन और प्रबंध निदेशक मधु एस. नायर** चेतावनी देते हैं कि यह निर्भरता गंभीर जोखिम है क्योंकि वैश्विक शिपिंग में किसी भी बाधा से भारतीय अर्थव्यवस्था प्रभावित हो सकती है।

• Mr. Nair believes India must build a robust shipping ecosystem to meet its growing maritime requirements.

श्री नायर का मानना है कि भारत को अपनी बढ़ती समुद्री आवश्यकताओं को पूरा करने के लिए एक मजबूत शिपिंग पारिस्थितिकी तंत्र का निर्माण करना चाहिए।

• Shipping, he notes, has a **cascading impact on the economy, driving growth across sectors**.

वे कहते हैं कि शिपिंग का अर्थव्यवस्था पर **क्रमिक प्रभाव** पड़ता है और यह विभिन्न क्षेत्रों में वृद्धि को बढ़ाता है।

• A comprehensive development of the sector would enable India to supply a wide range of goods to global markets.

इस क्षेत्र का व्यापक विकास भारत को वैश्विक बाजारों में विभिन्न प्रकार के सामान की आपूर्ति करने में सक्षम बनाएगा।

• A vibrant maritime and shipbuilding space is now taking shape in the country to serve the expanding trade.

देश में बढ़ते व्यापार को पूरा करने के लिए एक जीवंत समुद्री और जहाज़ निर्माण क्षेत्र आकार ले रहा है।

• Ship manufacturing, Mr. Nair adds, will energise overall economic activity and act as a powerful **labour multiplier**.

श्री नायर कहते हैं कि जहाज़ निर्माण समग्र आर्थिक गतिविधि को गति देगा और एक शक्तिशाली **श्रम गुणक** की तरह कार्य करेगा।

• To strengthen its shipping industry, the government has launched several initiatives to support **domestic shipbuilding**.

अपनी शिपिंग उद्योग को मजबूत करने के लिए सरकार ने **घरेलू जहाज़ निर्माण** को समर्थन देने के लिए कई पहलें शुरू की हैं।

• The announcement of a **₹70,000 crore package** for the shipbuilding and maritime sector is aimed at propelling India into the global **top 10 by 2030** and the **top five by 2047**.

जहाज़ निर्माण और समुद्री क्षेत्र के लिए **70,000 करोड़ रुपये के पैकेज** की घोषणा का लक्ष्य भारत को **2030 तक वैश्विक शीर्ष 10** और **2047 तक शीर्ष 5** में पहुंचाना है।

• The package envisages a **four-pillar approach** to enhance domestic shipbuilding capacity and maritime infrastructure: facilitate long-term financing; promote greenfield



and brownfield shipyard development; enhance technical capabilities; and undertake legal, taxation and policy reforms.

पैकेज घरेलू जहाज़ निर्माण क्षमता और समुद्री अवसंरचना बढ़ाने के लिए **चार-स्तंभ दृष्टिकोण** का प्रस्ताव करता है: दीर्घकालिक वित्तपोषण में सहायता; ग्रीनफील्ड और ब्राउनफील्ड शिपयार्ड विकास को प्रोत्साहित करना; तकनीकी क्षमताओं में वृद्धि; और कानूनी, कराधान एवं नीतिगत सुधार करना।

- During the recently concluded **Maritime India Week**, in a major boost to the **'Make in India'** initiative, public sector oil and gas companies placed **59 shipbuilding orders worth ₹47,800 crore**.

हाल ही में समाप्त हुए **मैरिटाइम इंडिया वीक** के दौरान, **'मेक इन इंडिया'** पहल को बड़े प्रोत्साहन के रूप में सार्वजनिक क्षेत्र की तेल और गैस कंपनियों ने **47,800 करोड़ रुपये मूल्य के 59 जहाज़ निर्माण ऑर्डर** दिए।

- Shipping Corporation of India announced plans to expand its fleet to **216 vessels** and Dredging Corporation of India said it plans to add **11 new dredgers**.

शिपिंग कॉर्पोरेशन ऑफ इंडिया ने अपनी बेड़े को **216 जहाज़ों** तक बढ़ाने की योजना की घोषणा की और ड्रेजिंग कॉर्पोरेशन ऑफ इंडिया ने **11 नए ड्रेजर** जोड़ने की योजना बताई।

- The **Green Tug Transition Programme (GTTP)** aims to generate a fleet of **100 eco-friendly tugboats by 2040**.

**ग्रीन टग ट्रांज़िशन प्रोग्राम (GTTP)** का लक्ष्य **2040 तक 100 पर्यावरण-अनुकूल टगबोटों** का बेड़ा तैयार करना है।

- "If the shipping requirement is mapped for the long term — at least 15 years from now — then the shipbuilding ecosystem can develop accordingly," he said.

उन्होंने कहा, "यदि शिपिंग आवश्यकता को दीर्घकालिक — कम से कम अगले 15 वर्षों — के लिए मैप किया जाए, तो जहाज़ निर्माण पारिस्थितिकी तंत्र उसी अनुसार विकसित हो सकता है।"

- He recalled how **Japan's efforts** to encourage shipbuilding after the **Second World War** brought prosperity to the country.

उन्होंने याद किया कि **द्वितीय विश्व युद्ध** के बाद **जापान के जहाज़ निर्माण को प्रोत्साहित करने के प्रयासों** ने देश में समृद्धि लाई।

- Today, three countries — **China, Korea and Japan** — together control **93% of the world's shipbuilding business**.

आज तीन देश — **चीन, कोरिया और जापान** — मिलकर **विश्व के 93% जहाज़ निर्माण व्यवसाय** को नियंत्रित करते हैं।

- On the other hand, India — with **1/6th of the world's population** and aspiring to be the **third largest economy** — accounts for barely **0.5% of the global shipbuilding business**.

दूसरी ओर, भारत — **दुनिया की 1/6 आबादी** के साथ और **तीसरी सबसे बड़ी अर्थव्यवस्था** बनने की आकांक्षा रखते हुए — वैश्विक जहाज़ निर्माण व्यवसाय का मात्र **0.5%** ही हिस्सा रखता है।

- Several coastal states in India are now coming out with special policies covering **ancillary and skilling support, roads and rail infrastructure**, and so on to meet the country's shipping requirements.

भारत के कई तटीय राज्य अब **सहायक व कौशल समर्थन, सड़क और रेल अवसंरचना** आदि को कवर करने वाली विशेष नीतियाँ ला रहे हैं ताकि देश की शिपिंग आवश्यकताएँ पूरी की जा सकें।

- States such as **Tamil Nadu, Maharashtra, Andhra Pradesh, Odisha and Gujarat** are pitching strongly

**तमिलनाडु, महाराष्ट्र, आंध्र प्रदेश, ओडिशा और गुजरात** जैसे राज्य मजबूती से प्रयास कर रहे हैं



# Surprise: reading a quantum clock can cost more than keeping it ticking

A clock's counter always increases, which aligns with our everyday experience that it ticks forward: the swinging of a pendulum or the vibrations of a quartz crystal are processes that consume energy and produce entropy, driving the clock's hands, but things are not so simple in the quantum world

Vasudevan Mukundh

Time for us is a constant, relentlessly moving forward. The ticking of a clock on the wall, the steady march of seconds on a digital display – they're such familiar concepts that we rarely stop to consider the physical processes that underpin them.

At its heart, any clock is a physical system that evolves in a predictable way, creating a record of the passage of time. Scientists are now exploring what timekeeping means at the smallest possible scale, in the quantum realm, and their findings could hone how physicists think about the role of measurement in timekeeping.

A study published in *Physical Review Letters* on November 14 by researchers from Austria, Italy, Ireland, Switzerland, and the UK, delved into this world by building and analysing a quantum clock. The researchers reported a surprising insight in their paper: that the energy cost of simply looking at a clock to read the time could exceed the energy required to make the clock tick in the first place. This discovery, if it's borne out in more research, could have important implications – for the use of ultra-precise timekeeping with devices like optical clocks as well as for the development of quantum technologies and scientists' grasp of the laws that govern the universe at its most fundamental.

## Shattered glass

Understanding the researchers' motivation demands first appreciating an important concept from physics called entropy. It's often colloquially described as a measure of disorder. In formal terms, entropy is linked to the second law of thermodynamics, which states that in an isolated system, entropy always tends to increase. This relentless increase is what gives time its arrow, its direction of evolution.

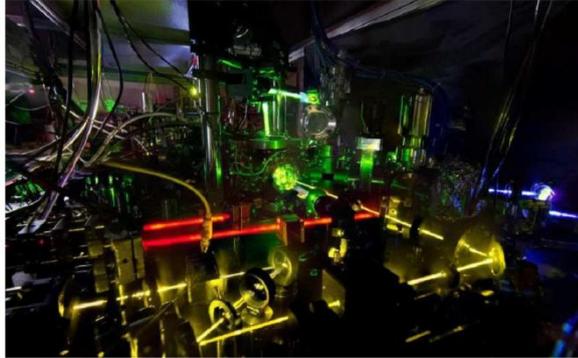
For example, a shattered pane of glass has more entropy than one that's intact, and we will never see the shards spontaneously reassemble. It's this principle of irreversible processes that allows a clock to create a lasting record of the past, distinguishing it from the future. For all practical purposes, a clock's counter always increases, which aligns with our everyday experience that clocks always tick "forward."

At the macroscopic scale of our everyday lives, this is straightforward. The swinging of a pendulum or the vibrations of a quartz crystal are processes that consume energy and produce entropy, driving the clock's hands forward. But in the quantum world, things are not so simple. Quantum systems are governed by probabilities and can exhibit strange behaviour. The amount of entropy produced by quantum processes is generally orders of magnitude lower than in classical processes. This can lead to situations where, due to random fluctuations, a quantum clock might briefly tick "backward."

This presents a conceptual tension. A clock, by its very definition, must be an irreversible device that reliably distinguishes past from future. How can a quantum system, with its inherent randomness and potential for backward steps, function as a true clock?

## Ticks of a quantum clock

The authors of the new study hypothesised that the solution lies not just in the clock's internal mechanism, or its clockwork, but in the process of measurement itself. They proposed that the act of extracting information from the quantum system – i.e. observing the ticks to create a classical, readable record – must also produce entropy. This "cost of observation" could be the missing piece that enforces the forward flow of time.



A clock, by its very definition, must be an irreversible device that reliably distinguishes past from future. Atomic clocks, like the Ytterbium lattice clock shown here, can make that distinction with extreme precision. NIST

even when the quantum clockwork itself is at a standstill, the team figured.

The motivation for the new study was to experimentally test this idea. The team aimed to build a quantum clock where they could separately measure the entropy produced by the internal clockwork and the entropy produced by the measurement apparatus. This would allow the researchers to directly compare these two costs and determine which one is more fundamental to the process of timekeeping at the quantum scale. Such an experiment would be the first to explore the interplay between the entropy produced by a microscopic clockwork and its macroscopic measurement apparatus.

To realise their quantum clock, the scientists used a device called a double quantum dot (DQD). Imagine two minuscule human-made islands in a semiconductor material, so small that it can hold only one extra electron at a time. These are quantum dots. (Their inventors were rewarded with the Nobel Prize for chemistry in 2023.)

By applying precise voltages, the researchers could control the movement of a single electron, causing it to tunnel from a source onto the first dot, then to the second dot, and finally off to a drain. (The demonstration of quantum tunnelling in a large circuit won the Nobel Prize for physics in 2025.) This sequential movement of an electron constituted a single tick of the team's clock.

## Reading the time

The state of the DQD could be in one of three configurations: no excess electron on either dot (which we'll call state 0), an electron on the left dot (state L) or an electron on the right dot (state R). A forward tick is a full cycle, for instance from states 0 to L to R and back to 0, as the electron traversed the dots. To "read" the time, the researchers needed to know which state the DQD was in at any given moment. They accomplished this using a nearby charge sensor – which was another quantum dot whose electrical properties were sensitive to the location of the electron in the DQD. By measuring the current flowing through this sensor, they could deduce whether the DQD was in state 0, L or R. This measurement process, however, wasn't free: it required energy and therefore produced entropy.

The team used two different methods to read the sensor: a direct current (DC) measurement and a more sophisticated radio-frequency (RF) reflectometry

**The interaction between a quantum system and its classical measurement device isn't just a technical detail: it's a central part of the physics involved. The entropy produced by the amplification and measurement of a clock's ticks is the most important and fundamental thermodynamic cost of timekeeping at the quantum scale**

technique. This allowed them to vary and precisely measure the power dissipated, and thus the entropy generated, by the act of observation itself. By simultaneously controlling the voltage across the DQD, which dictated the energy dissipated by the clock's tick, they could independently study the thermodynamic costs of both the clockwork and "reading the time".

## Source of irreversibility

The results of the experiment seemed striking. The researchers first examined the relationship between the clock's precision and the entropy produced by its internal workings, i.e. the DQD. As predicted by thermodynamic principles, they found that a more precise clock – one with more regular and forward-moving ticks – required more entropy. When the DQD was brought to equilibrium, where forward and backward ticks were equally likely, the clockwork produced no net entropy, and its ability to record the passage of time vanished.

However, the researchers' more remarkable claim emerged when they analysed the entropy cost of the measurement process. They found that the entropic cost of extracting the classical ticks from the quantum clock was the dominant factor by an astonishing nine orders of magnitude. In other words, the energy dissipated to simply find out what time it was dwarfed the energy needed to make the clock tick, by a factor of a billion.

The team also showed that the measurement process could effectively retrieve the information that makes the device a clock. This was because even when the internal clockwork was at equilibrium, i.e. producing no entropy, the act of continuously monitoring the DQD created an irreversible, classical record of its state changes. This record, generated at a significant entropic cost by

the measurement device, allowed the researchers to estimate the passage of time.

Sure, in your house as well, reading time from the device on the wall gives you the time information that also makes the device's identify a "clock." But here's what's unique about the quantum clock: the team interpreted their results as evidence that in the DQD clock, the dominant source of irreversibility needed for timekeeping comes from the act of observation, not from the clockwork itself!

These findings also reinforce those reported by a different group in 2023: that "reading the clock" is an invasive process in quantum timekeeping that can't be taken for granted. The new study also complicates and deepens the understanding of precision reported in the 2023 study by showing that the effect of measurement isn't monolithic. Instead of "reading the clock more often is better", the new study seems to report a more complex reality: the relationship between measurement strength and precision depends on the clockwork.

## Physics of timekeeping

The study's implications could be far-reaching, touching on fundamental physics, metrology (the science of measurement), and the future of quantum computing. Perhaps foremost, it suggests that the oft-ignored interaction between a quantum system and its classical measurement device isn't just a technical detail: it's a central part of the physics involved. The entropy produced by the amplification and measurement of a clock's ticks is the most important and fundamental thermodynamic cost of timekeeping at the quantum scale.

At least one implication is potentially practical: current atomic clocks – which are some of the most accurate measurement devices in existence – could be improved by designing more thermodynamically efficient measurement systems. That is, by minimising the entropic cost of observation, it may be possible to create clocks that are even more precise.

The principles the new study has explored are also not limited to clocks. Any quantum computer will depend on being able to precisely control and measure quantum states. Understanding the thermodynamic costs associated with extracting information from a quantum system is crucial for engineers to design efficient and scalable quantum machines. The authors' approach feeds into a broader line of work on the energy cost of quantum measurements, which may eventually inform how engineers design quantum computers.

Finally, some physicists interpret such results as suggesting that the clear, unidirectional flow of time that we experience may not be solely a property of the microscopic world itself. Instead, it could be a feature that emerges anew from the process of extracting and recording information on a macroscopic scale.

In the classical proverb, a watched pot never boils. In these quantum clock experiments, the pot certainly boils, but turning its bubbles into a reliable stopwatch turns out to be costly.

# Surprise: reading a quantum clock can cost more than keeping it ticking

आश्चर्य: एक क्वांटम घड़ी को पढ़ना उसे चलते रखने से अधिक महंगा पड़ सकता है

## Quantum Time and Quantum Clock Study क्वांटम समय और क्वांटम घड़ी अध्ययन

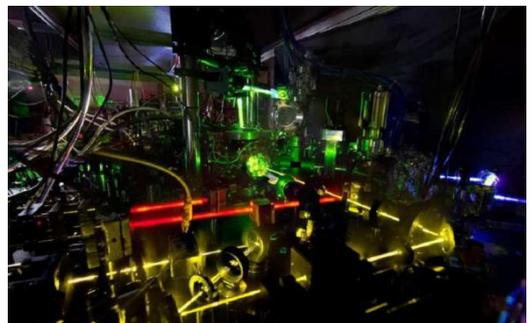
• Time for us is a constant, relentlessly moving forward. समय हमारे लिए एक स्थिर मात्रा है, जो निरंतर आगे बढ़ती रहती है।

• The ticking of a clock on the wall, the steady march of seconds on a digital display – they're such familiar concepts that we rarely stop to consider the physical processes that underpin them.

दीवार पर घड़ी की टिक-टिक, डिजिटल डिस्प्ले पर seconds का स्थिर प्रवाह — ये ऐसे परिचित विचार हैं कि हम शायद ही कभी उन भौतिक प्रक्रियाओं पर विचार करते हैं जो इनके पीछे कार्यरत होती हैं।

• At its heart, any clock is a physical system that evolves in a predictable way, creating a record of the passage of time.

मूल रूप से, कोई भी घड़ी एक भौतिक प्रणाली होती है जो **predictable** तरीके से विकसित होती है और **समय के**



A quantum dot is a crystal that often consists of just a few thousand atoms. In terms of size, it has the same relationship to a football as a football has to the size of the Earth

The researchers used the movement of single electrons across a pair of quantum dots – whose size is explained here – to denote the tick of a clock.

JOHN JABRY/STYLING; STEPHEN GRADY/ALAMY FOR SCIENCE

प्रवाह का रिकॉर्ड बनाती है।

• Scientists are now exploring what timekeeping means at the smallest possible scale, in the **quantum realm**, and their findings could hone how physicists think about the role of **measurement** in timekeeping.

वैज्ञानिक अब **quantum realm** में, सबसे छोटे स्तर पर समय मापन का अर्थ क्या होता है, इसका अध्ययन



कर रहे हैं, और उनके निष्कर्ष यह समझ सुधार सकते हैं कि समय मापन में **measurement** की क्या भूमिका है।

- A study published in **Physical Review Letters** on **November 14** by researchers from **Austria, Italy, Ireland, Switzerland, and the U.K.** delved into this world by building and analysing a **quantum clock**.  
14 नवंबर को **Physical Review Letters** में प्रकाशित **Austria, Italy, Ireland, Switzerland, और U.K.** के शोधकर्ताओं के अध्ययन ने एक **quantum clock** बनाकर और उसका विश्लेषण करके इस क्षेत्र की जांच की।
- The researchers reported a surprising insight in their paper: that the **energy cost** of simply looking at a clock to **read the time** could exceed the energy required to make the clock **tick** in the first place.  
शोधकर्ताओं ने एक चौकाने वाली बात बताई: घड़ी को देखकर **समय पढ़ने** की **energy cost**, घड़ी को **tick** कराने के लिए आवश्यक ऊर्जा से अधिक हो सकती है।
- This discovery, if it's borne out in more research, could have important implications — for the future of **ultra-precise timekeeping** with devices like **optical clocks** as well as for the development of **quantum technologies** and scientists' grasp of the laws that govern the universe at its most fundamental.  
यह खोज, यदि आगे के शोध में सही पाई जाती है, तो **optical clocks** जैसे उपकरणों के साथ **ultra-precise timekeeping** और **quantum technologies** के विकास तथा ब्रह्मांड के मौलिक नियमों को समझने पर महत्वपूर्ण प्रभाव डाल सकती है।

## Shattered glass

### टूटा हुआ कांच

- Understanding the researchers' motivation demands first appreciating an important concept from physics called **entropy**.  
शोधकर्ताओं की प्रेरणा को समझने के लिए पहले **entropy** नामक भौतिकी के एक महत्वपूर्ण सिद्धांत को समझना आवश्यक है।
- It's often colloquially described as a measure of **disorder**.  
इसे अक्सर **अव्यवस्था** के माप के रूप में वर्णित किया जाता है।
- In formal terms, entropy is linked to the **second law of thermodynamics**, which states that in an **isolated system**, entropy always tends to increase.  
औपचारिक रूप से, एंट्रॉपी **second law of thermodynamics** से जुड़ी है, जो कहता है कि **isolated system** में एंट्रॉपी हमेशा बढ़ती है।
- This relentless increase is what gives time its **arrow**, its direction of evolution.  
एंट्रॉपी की यह निरंतर वृद्धि ही समय को उसका **arrow**, उसका विकास दिशा देती है।
- For example, a **shattered pane of glass** has more entropy than one that's intact, and we will never see the shards spontaneously reassemble.  
उदाहरण के लिए, **टूटा हुआ कांच** एक साबुत कांच की तुलना में अधिक एंट्रॉपी रखता है, और इसके टुकड़े स्वयं जुड़ते नहीं दिखते।
- It's this principle of **irreversible processes** that allows a clock to create a lasting record of the past, distinguishing it from the future.  
**अप्रतिवर्ती प्रक्रियाओं** का यही सिद्धांत घड़ी को अतीत का स्थायी रिकॉर्ड बनाने में सक्षम बनाता है।
- For all practical purposes, a clock's counter always increases, which aligns with our everyday experience that clocks always tick "forward."  
व्यवहारिक रूप से, घड़ी का काउंटर हमेशा बढ़ता है, जो हमारे अनुभव से मेल खाता है कि घड़ियाँ हमेशा आगे की ओर चलती हैं।
- At the macroscopic scale of our everyday lives, this is straightforward.  
हमारे दैनिक जीवन के **macroscopic** पैमाने पर यह सरल है।
- The swinging of a **pendulum** or the vibrations of a **quartz crystal** are processes that consume energy and produce entropy, driving the clock's hands forward.  
**pendulum** का झूलना या **quartz crystal** का कंपन ऊर्जा खर्च करते हैं और एंट्रॉपी पैदा करते हैं, जिससे घड़ी आगे बढ़ती है।
- But in the **quantum world**, things are not so simple.  
लेकिन **quantum world** में चीजें इतनी सरल नहीं हैं।



- Quantum systems are governed by **probabilities** and can exhibit strange behaviours. क्वांटम सिस्टम **probabilities** पर चलते हैं और विचित्र व्यवहार दिखा सकते हैं।
- The amount of entropy produced by quantum processes is generally **orders of magnitude lower** than in classical processes. क्वांटम प्रक्रियाओं में उत्पन्न एंट्रॉपी **classical processes** की तुलना में बहुत कम होती है।
- This can lead to situations where, due to random fluctuations, a quantum clock might briefly tick “**backward.**” इससे ऐसे हालात बन सकते हैं जब यादृच्छिक उतार-चढ़ाव के कारण क्वांटम घड़ी थोड़ी देर के लिए “**backward**” टिक कर सकती है।
- This presents a conceptual tension. यह एक वैचारिक तनाव प्रस्तुत करता है।
- A clock, by its very definition, must be an **irreversible** device that reliably distinguishes past from future. घड़ी, अपनी परिभाषा से, एक **irreversible** उपकरण होना चाहिए जो अतीत और भविष्य में अंतर करे।
- How can a **quantum system**, with its inherent randomness and potential for backward steps, function as a true clock? तो **quantum system** जिसमें यादृच्छिकता है और पीछे जाने की संभावना है, एक वास्तविक घड़ी कैसे बन सकता है?

## Ticks of a quantum clock

### क्वांटम घड़ी के टिक

- The authors of the new study hypothesised that the solution lies not just in the clock’s internal mechanism, or its clockwork, but in the process of **measurement** itself. शोधकर्ताओं ने माना कि समाधान केवल घड़ी की आंतरिक प्रणाली में नहीं, बल्कि **measurement** प्रक्रिया में भी है।
- They proposed that the act of extracting information from the quantum system — i.e. **observing the ticks** to create a classical, readable record — must also produce entropy. उन्होंने प्रस्तावित किया कि क्वांटम सिस्टम से जानकारी निकालना—यानी **ticks को observe करना**—भी एंट्रॉपी पैदा करता है।
- This “**cost of observation**” could be the missing piece that enforces the **forward flow of time**, even when the quantum clockwork itself is at a standstill, the team figured. यह “**cost of observation**” वह कारक हो सकता है जो समय के **forward flow** को सुनिश्चित करता है, भले ही क्वांटम घड़ी का तंत्र स्थिर हो।
- The motivation for the new study was to experimentally test this idea. इस नए अध्ययन का उद्देश्य इस विचार का प्रयोगात्मक परीक्षण करना था।
- The team aimed to build a **quantum clock** where they could separately measure the entropy produced by the **internal clockwork** and the entropy produced by the **measurement apparatus**. टीम ने एक **quantum clock** बनाने का लक्ष्य रखा जिसमें वे **internal clockwork** और **measurement apparatus** द्वारा उत्पन्न एंट्रॉपी को अलग-अलग माप सकें।
- This would allow the researchers to directly compare these two costs and determine which one is more fundamental to the process of timekeeping at the quantum scale. इससे शोधकर्ता इन दोनों लागतों की तुलना कर पाते और समझ पाते कि क्वांटम स्तर पर समय-निर्धारण के लिए कौन अधिक मूलभूत है।
- Such an experiment would be the first to explore the interplay between the entropy produced by a **microscopic clockwork** and its **macroscopic measurement apparatus**. ऐसा प्रयोग पहली बार **microscopic clockwork** और **macroscopic measurement apparatus** के बीच एंट्रॉपी के संबंध का अध्ययन करता।
- To realise their quantum clock, the scientists used a device called a **double quantum dot (DQD)**. अपनी क्वांटम घड़ी को साकार करने के लिए वैज्ञानिकों ने **double quantum dot (DQD)** नामक उपकरण का उपयोग किया।
- Imagine two minuscule human-made islands in a semiconductor material, so small that they can hold only **one extra electron** at a time.



कल्पना करें कि सेमीकंडक्टर में दो छोटे मानव-निर्मित द्वीप हैं, जो इतने सूक्ष्म हैं कि वे एक बार में केवल एक **electron** रख सकते हैं।

- These are **quantum dots**.  
ये **quantum dots** हैं।
- (Their inventors were rewarded with the **Nobel Prize for Chemistry 2023**.)  
(इसके आविष्कारकों को **रसायन विज्ञान का नोबेल पुरस्कार 2023** मिला।)
- By applying precise voltages, the researchers could control the movement of a **single electron**, causing it to **tunnel** from a source onto the first dot, then to the second dot, and finally off to a drain.  
सटीक वोल्टेज लागू करके शोधकर्ता **single electron** की गति नियंत्रित कर सकते थे, जिससे वह स्रोत से पहले डॉट तक, फिर दूसरे डॉट तक और अंत में ड्रेन तक **tunnel** कर सके।
- (The demonstration of **quantum tunnelling** in a large circuit won the **Nobel Prize for Physics 2025**.)  
(**quantum tunnelling** के बड़े परिपथ में प्रदर्शन को **भौतिकी का नोबेल पुरस्कार 2025** मिला।)
- This sequential movement of an electron constituted a **single tick** of the team's clock.  
इलेक्ट्रॉन की यह क्रमिक गति टीम की घड़ी का एक **single tick** बनाती थी।

## Reading the time

### समय पढ़ना

- The state of the **DQD** could be in one of three configurations: no excess electron on either dot (which we'll call **state 0**), an electron on the **left dot (state L)** or an electron on the **right dot (state R)**.  
**DQD** की अवस्था तीन कॉन्फिगरेशन में से एक हो सकती है: किसी भी डॉट पर अतिरिक्त इलेक्ट्रॉन नहीं (**state 0**), **बाएँ डॉट पर इलेक्ट्रॉन (state L)** या **दाएँ डॉट पर इलेक्ट्रॉन (state R)**।
- A forward tick is a full cycle, for instance from states **0 to L to R and back to 0**, as the electron traversed the dots.  
एक forward tick एक पूरा चक्र होता है, उदाहरण के लिए अवस्थाएँ **0 से L से R और वापस 0 तक**, जब इलेक्ट्रॉन डॉट्स के बीच चलता है।
- To "read" the time, the researchers needed to know which state the **DQD** was in at any given moment.  
समय को "पढ़ने" के लिए, शोधकर्ताओं को यह जानना आवश्यक था कि किसी भी क्षण **DQD** किस अवस्था में था।
- They accomplished this using a nearby **charge sensor** — which was another **quantum dot** whose electrical properties were sensitive to the location of the electron in the DQD.  
उन्होंने यह एक पास के **charge sensor** का उपयोग करके किया — जो एक अन्य **quantum dot** था, जिसकी विद्युत विशेषताएँ DQD में इलेक्ट्रॉन की स्थिति के प्रति संवेदनशील थीं।
- By measuring the **current** flowing through this sensor, they could deduce whether the DQD was in **state 0, L or R**.  
इस सेंसर से प्रवाहित होने वाली **current** को मापकर, वे यह निर्धारित कर सकते थे कि DQD **state 0, L या R** में है।
- This measurement process, however, wasn't free: it required **energy** and therefore produced **entropy**.  
हालांकि, यह मापन प्रक्रिया मुफ्त नहीं थी: इसमें **energy** की आवश्यकता होती थी और इसलिए **entropy** उत्पन्न होती थी।
- The team used two different methods to read the sensor: a **direct-current (DC) measurement** and a more sophisticated **radio-frequency (RF) reflectometry technique**.  
टीम ने सेंसर को पढ़ने के लिए दो तरीकों का उपयोग किया: **direct-current (DC) measurement** और अधिक उन्नत **radio-frequency (RF) reflectometry technique**।
- This allowed them to vary and precisely measure the **power dissipated**, and thus the **entropy generated**, by the act of observation itself.  
इससे उन्हें अवलोकन की प्रक्रिया द्वारा नष्ट हुई **power** और उत्पन्न हुई **entropy** को बदलने और सटीक रूप से मापने की अनुमति मिली।
- By simultaneously controlling the **voltage** across the DQD, which dictated the energy dissipated by the clock's tick, they could independently study the thermodynamic costs of



both the **clockwork** and ‘**reading the time**’.

DQD पर लागू **voltage** को नियंत्रित करके, जो clock के tick की ऊर्जा को निर्धारित करता था, वे **clockwork** और ‘**reading the time**’ दोनों की थर्मोडायनामिक लागतों का स्वतंत्र रूप से अध्ययन कर सके।

## Source of irreversibility अप्रतिवर्तनशीलता का स्रोत

- The results of the experiment seemed striking.  
प्रयोग के परिणाम चौंकाने वाले लगे।
- The researchers first examined the relationship between the clock’s **precision** and the **entropy** produced by its internal workings, i.e. the **DQD**.  
शोधकर्ताओं ने पहले clock की **precision** और उसके आंतरिक कार्यों, अर्थात् **DQD**, द्वारा उत्पन्न **entropy** के बीच संबंध की जाँच की।
- As predicted by **thermodynamic principles**, they found that a more **precise clock** — one with more regular and forward-moving ticks — required **more entropy**.  
**थर्मोडायनामिक सिद्धांतों** के अनुसार, उन्होंने पाया कि अधिक **precise clock**, जिसमें नियमित और forward-moving ticks होते हैं, को **अधिक entropy** की आवश्यकता होती है।
- When the DQD was brought to **equilibrium**, where forward and backward ticks were equally likely, the clockwork produced **no net entropy**, and its ability to record the passage of time vanished.  
जब DQD को **equilibrium** में लाया गया, जहाँ forward और backward ticks समान रूप से संभावित थे, तो clockwork ने **कोई net entropy** उत्पन्न नहीं की, और समय दर्ज करने की उसकी क्षमता समाप्त हो गई।
- However, the researchers’ more remarkable claim emerged when they analysed the **entropy cost of the measurement process**.  
हालांकि, शोधकर्ताओं का अधिक उल्लेखनीय दावा तब सामने आया जब उन्होंने **measurement process की entropy cost** का विश्लेषण किया।
- They found that the **entropic cost of extracting the classical ticks** from the quantum clock was the dominant factor by an astonishing **nine orders of magnitude**.  
उन्होंने पाया कि quantum clock से **classical ticks निकालने की entropic cost** आश्चर्यजनक रूप से **nine orders of magnitude** तक प्रमुख थी।
- In other words, the energy dissipated to simply find out **what time it was** dwarfed the energy needed to **make the clock tick**, by a factor of a **billion**.  
दूसरे शब्दों में, सिर्फ यह जानने में कि **समय क्या है**, खर्च हुई ऊर्जा, clock को tick कराने के लिए आवश्यक ऊर्जा से **एक billion गुना** अधिक थी।
- The team also showed that the measurement process could effectively retrieve the information that makes the device a **clock**.  
टीम ने यह भी दिखाया कि मापन प्रक्रिया उस जानकारी को प्रभावी ढंग से पुनः प्राप्त कर सकती है जो उपकरण को **clock** बनाती है।
- This was because even when the internal clockwork was at **equilibrium**, i.e. producing no entropy, the act of continuously monitoring the DQD created an **irreversible, classical record** of its state changes.  
ऐसा इसलिए था क्योंकि जब clockwork **equilibrium** में था और कोई entropy उत्पन्न नहीं कर रहा था, तब भी DQD की निरंतर निगरानी ने उसकी अवस्थाओं का **irreversible, classical record** बना दिया।
- This record, generated at a significant **entropic cost**, allowed the researchers to estimate the passage of time.  
यह रिकॉर्ड, जो महत्वपूर्ण **entropic cost** पर बना, शोधकर्ताओं को समय के बीतने का अनुमान लगाने में सक्षम बनाता था।
- Sure, in your house as well, reading time from the device on the wall gives you the time information that also makes the device’s identity a “**clock**.”  
निश्चित रूप से, आपके घर में भी दीवार पर लगे उपकरण से समय पढ़ना आपको वही जानकारी देता है जो उस उपकरण को “**clock**” की पहचान देती है।
- But here’s what’s unique about the **quantum clock**: the team interpreted their results as evidence that in the DQD clock, the dominant source of **irreversibility** needed for timekeeping comes from the **act of observation**, not from the **clockwork** itself!



लेकिन **quantum clock** की विशेषता यह है: टीम ने अपने परिणामों की व्याख्या इस रूप में की कि DQD clock में समय बनाए रखने के लिए आवश्यक **irreversibility** का प्रमुख स्रोत **अवलोकन की क्रिया** है, न कि स्वयं **clockwork**!

- These findings also reinforce those reported by a different group in **2023**: that “**reading the clock**” is an invasive process in quantum timekeeping that can’t be taken for granted.  
ये निष्कर्ष **2023** में एक अन्य समूह द्वारा रिपोर्ट की गई बातों को भी मजबूत करते हैं: कि “**clock को पढ़ना**” quantum timekeeping में एक invasive प्रक्रिया है जिसे हल्के में नहीं लिया जा सकता।
- The new study also complicates and deepens the understanding of **precision** reported in the **2023 study** by showing that the effect of measurement isn’t monolithic.  
नई स्टडी यह भी दिखाकर **precision** की समझ (जो **2023 study** में बताई गई थी) को और जटिल और गहरा बनाती है कि मापन का प्रभाव एक-सा नहीं होता।
- Instead of ‘**reading the clock more often is better**’, the new study seems to report a more complex reality: the relationship between **measurement strength** and **precision** depends on the **clockwork**.  
‘**clock को अधिक बार पढ़ना बेहतर है**’ के बजाय, नई स्टडी अधिक जटिल वास्तविकता की ओर संकेत करती है: **measurement strength** और **precision** के बीच संबंध **clockwork** पर निर्भर करता है।

## Physics of timekeeping

### समय मापन का भौतिक विज्ञान

- The study’s implications could be far-reaching, touching on fundamental physics, metrology (the science of measurement), and the future of quantum computing.  
अध्ययन के प्रभाव **far-reaching**, **fundamental physics**, **metrology (science of measurement)**, और **quantum computing के future** को छू सकते हैं।
- Perhaps foremost, it suggests that the oft-ignored interaction between a quantum system and its classical measurement device isn’t just a technical detail: it’s a central part of the physics involved.  
शायद foremost, यह सुझाव देता है कि **quantum system** और **classical measurement device** के बीच अक्सर नजरअंदाज की जाने वाली interaction केवल एक technical detail नहीं है: यह physics का **central part** है।
- The entropy produced by the amplification and measurement of a clock’s ticks is the most important and fundamental thermodynamic cost of timekeeping at the quantum scale.  
**Amplification** और **measurement** से clock’s ticks द्वारा उत्पन्न **entropy**, quantum scale पर timekeeping की सबसे important और fundamental **thermodynamic cost** है।
- At least one implication is potentially practical: current atomic clocks — which are some of the most accurate timekeeping devices in existence — could be improved by designing more thermodynamically efficient measurement systems.  
कम से कम एक implication practical है: वर्तमान **atomic clocks** — जो सबसे accurate timekeeping devices हैं — को **thermodynamically efficient measurement systems** बनाकर सुधारा जा सकता है।
- That is, by minimising the entropy cost of observation, it may be possible to create clocks that are even more precise.  
अर्थात्, **entropy cost** को minimize करके और भी **precise clocks** बनाना संभव हो सकता है।
- The principles the new study has explored are also not limited to clocks.  
इस नए अध्ययन द्वारा explore किए गए principles केवल **clocks** तक सीमित नहीं हैं।
- Any quantum computer will depend on being able to precisely control and measure quantum states.  
कोई भी **quantum computer** quantum states को precisely control और measure करने पर निर्भर करेगा।
- Understanding the thermodynamic costs associated with extracting information from a quantum system is crucial for engineers to design efficient and scalable quantum machines.  
Quantum system से information extract करने की **thermodynamic costs** को समझना engineers के लिए efficient और **scalable quantum machines** डिजाइन करने में crucial है।
- The authors’ approach feeds into a broader line of work on the energy cost of quantum measurements, which may eventually inform how engineers design quantum computers.



लेखकों का approach **energy cost of quantum measurements** पर व्यापक कार्य में योगदान देता है, जो भविष्य में quantum computers की engineering को निर्धारित कर सकता है।

- Finally, some physicists interpret such results as suggesting that the clear, unidirectional flow of time that we experience may not be solely a property of the microscopic world itself.  
अंततः, कुछ physicists कहते हैं कि हमारा **clear, unidirectional flow of time** शायद microscopic world की अपनी property नहीं है।
- Instead, it could be a feature that emerges anew from the process of extracting and recording information on a macroscopic scale.  
बल्कि, यह **extracting और recording information** की **macroscopic process** से उभरने वाली feature हो सकती है।
- In the classical proverb, a watched pot never boils.  
classical proverb के अनुसार, **watched pot never boils**।
- In these quantum clock experiments, the pot certainly boils, but turning its bubbles into a reliable stopwatch turns out to be costly.  
इन **quantum clock experiments** में, pot निश्चित रूप से boils होता है, लेकिन उसकी **bubbles को reliable s stopwatch** में बदलना **costly** साबित होता है।

PATRIOTIC IAS



# Astronomers spot coronal mass ejection on another star for first time

GS III: S&T

**A**stronomers have said they have detected a powerful storm on a star other than our sun for the first time, discovering an explosion so violent it could have stripped away the atmosphere of any planets unlucky enough to be nearby.

Solar storms on the sun sometimes shoot out huge eruptions known as coronal mass ejections, which can disrupt satellites when they arrive at the earth, and create colourful auroras that dance across the sky.

In fact, a particularly powerful solar storm caused auroras as far south as the U.S. city of Tennessee on November 12, according to the National Oceanic and Atmospheric Administration. Auroras were also visible in the skies above New Zealand, images showed, with more expected into Wednesday night.

However, observing such a storm on a distant star had proven difficult for astronomers.

New research, published in the journal *Nature* has now revealed that an international team of researchers has finally achieved the feat.

The discovery used data from a European network of telescopes called LOFAR.

The team of astronomers has been using LOFAR since 2016 to detect the most extreme and violent events in the universe – such as black holes – which emit relatively stable radio signals over time.

"We always have stars in the telescope's field of view but generally we're not interested in them," Cyril Tasse, a Paris Observatory astronomer and the study's co-author, said.

**satellites** को बाधित **auroras** उत्पन्न करते हैं।

- In fact, a particularly powerful solar storm caused auroras as far south as the U.S. city of **Tennessee** on **November 12**, according to the National Oceanic and Atmospheric Administration.

वास्तव में, एक अत्यंत शक्तिशाली solar storm ने **12 November** को **Tennessee (U.S.)** तक auroras उत्पन्न किए, जैसा कि **NOAA** ने कहा।

- Auroras were also visible in the skies above New Zealand, images showed, with more expected into Wednesday night.

## This field opens up perspectives on how the magnetic activity of stars influences the habitability of planets that surround them

However, the researchers have set up a data processing system that also records what is going on with the stars behind the behemoths they are chasing. In 2022, the team decided to find out "what had been caught in this net", Mr. Tasse said.

They found that there was a huge explosion which only lasted a minute on May 16, 2016. It came from a red dwarf star called StKM 1-1262 more than 133 light years away. The team then determined it was a coronal mass ejection.

"It's the first time we have detected one" on a star other than our own, Mr. Tasse said.

But this coronal mass ejection was "at least 10,000 times more violent than known solar storms" on the sun, he added.

### **Atmosphere killers**

The discovery could have an impact on the search for planets beyond our solar system that have the potential to host life.

Red dwarfs, which have a mass of between 10% and 50% that of our sun, have proven to be the most likely stars in the universe to host planets that are roughly the size of the earth.

"The first radio detection inaugurates a new era for space weather applied to other star systems," said Philippe Zarka, research director at the Paris Observatory and a study co-author. "This emerging field opens up major perspectives for how the magnetic activity of stars influences the habitability of the planets that surround them."

Mr. Tasse said that it appears that red dwarf stars have "much more erratic and violent" behaviour than the sun.

"The implication is that these stars can be rather inhospitable when it comes to life and exoplanets," because they have storms so powerful they could destroy the atmospheres of planets nearby, he added.

## **Astronomers spot coronal mass ejection on another star for first time**

**खगोलविदों ने पहली बार किसी अन्य तारे पर कोरोनाल मास इजेक्शन देखा**

## **Astronomers detect violent storm on distant star**

**खगोलविदों ने दूरस्थ तारे पर भीषण तूफान का पता लगाया**

- Astronomers have said they have detected a powerful storm on a star other than our sun for the first time, discovering an explosion so violent it could have stripped away the atmosphere of any planets unlucky enough to be nearby.

खगोलविदों ने कहा है कि उन्होंने पहली बार हमारे **sun** के अलावा किसी तारे पर एक **powerful storm** का पता लगाया है, और इतना violent explosion खोजा है कि वह पास मौजूद किसी भी ग्रह का **atmosphere** छीन सकता था।

- Solar storms on the sun sometimes shoot out huge eruptions known as coronal mass ejections, which can disrupt satellites when they arrive at the earth, and create colourful auroras that dance across the sky.

**Solar storms** कभी-कभी **coronal mass ejections** नामक विशाल विस्फोट भेजते हैं, जो पृथ्वी तक पहुँचने पर कर सकते हैं और sky में



छवियों में दिखा कि **New Zealand** के आसमान में भी auroras दिखाई दिए, और बुधवार रात तक और auroras की अपेक्षा की गई।

- However, observing such a storm on a distant star had proven difficult for astronomers.  
हालांकि, किसी distant star पर ऐसा storm देखना खगोलविदों के लिए कठिन साबित हुआ था।
- New research, published in the journal **Nature** has now revealed that an international team of researchers has finally achieved the feat.  
नए शोध, जो **Nature** में प्रकाशित हुआ, ने प्रकट किया कि अंतरराष्ट्रीय टीम ने अंततः यह उपलब्धि हासिल कर ली है।
- The discovery used data from a European network of telescopes called **LOFAR**.  
इस खोज में **LOFAR** नामक European telescope network के डेटा का उपयोग किया गया।
- The team of astronomers has been using LOFAR since **2016** to detect the most extreme and violent events in the universe — such as black holes — which emit relatively stable radio signals over time.  
खगोलविदों की टीम **2016** से LOFAR का उपयोग **extreme** और **violent cosmic events** (जैसे **black holes**) का पता लगाने के लिए कर रही है, जो स्थिर radio signals उत्सर्जित करते हैं।
- "We always have stars in the telescope's field of view but generally we're not interested in them," Cyril Tasse, a Paris Observatory astronomer and the study's co-author, said.  
"हमारे telescope की field of view में हमेशा stars होते हैं लेकिन हम सामान्यतः उनमें रुचि नहीं लेते," **Cyril Tasse** (Paris Observatory) ने कहा।
- However, the researchers have set up a data processing system that also records what is going on with the stars behind the behemoths they are chasing.  
हालांकि, शोधकर्ताओं ने एक data processing system स्थापित किया जो उन बड़े cosmic behemoths के पीछे के stars की गतिविधियाँ भी रिकॉर्ड करता है।
- In **2022**, the team decided to find out "what had been caught in this net", Mr. Tasse said.  
**2022** में, टीम ने निर्णय लिया कि "इस जाल में क्या फँसा है", जैसा कि Mr. Tasse ने कहा।
- They found that there was a huge explosion which only lasted a minute on **May 16, 2016**.  
उन्होंने पाया कि **16 May 2016** को केवल एक minute तक चलने वाला एक huge explosion था।
- It came from a red dwarf star called **StKM 1-1262** more than **133 light years** away.  
यह **StKM 1-1262** नामक **red dwarf star** से आया था, जो **133 light years** दूर है।
- The team then determined it was a coronal mass ejection.  
टीम ने फिर निर्धारित किया कि यह एक **coronal mass ejection** था।
- "It's the first time we have detected one" on a star other than our own, Mr. Tasse said.  
"यह पहली बार है कि हमने अपने sun के अलावा किसी star पर ऐसा पाया है," Mr. Tasse ने कहा।
- But this coronal mass ejection was "at least **10,000 times** more violent than known solar storms" on the sun, he added.  
लेकिन यह coronal mass ejection sun के known solar storms की तुलना में "**कम से कम 10,000 गुना violent**" था, उन्होंने जोड़ा।



## Atmosphere killers

### वायुमंडल नष्ट करने वाले

- The discovery could have an impact on the search for planets beyond our solar system that have the potential to host life.  
यह खोज उन exoplanets की खोज पर प्रभाव डाल सकती है जिनमें life-hosting potential है।
- Red dwarfs, which have a mass of between **10% and 50%** that of our sun, have proven to be the most likely stars in the universe to host planets that are roughly the size of the earth.  
**Red dwarfs**, जिनका mass हमारे sun के **10%-50%** के बीच होता है, earth-sized planets को host करने के लिए universe के सबसे likely stars हैं।
- "The first radio detection inaugurates a new era for space weather applied to other star systems," said Philippe Zarka, research director at the Paris Observatory and a study co-



author.

"यह पहली radio detection **space weather** अध्ययन के लिए एक नए युग की शुरुआत है," **Philippe Zarka** ने कहा।

- "This emerging field opens up major perspectives for how the magnetic activity of stars influences the habitability of the planets that surround them."  
"यह उभरता हुआ field दर्शाता है कि stars की **magnetic activity** अपने planets की **habitability** को कैसे प्रभावित करती है।"
- Mr. Tasse said that it appears that red dwarf stars have "much more erratic and violent" behaviour than the sun.  
Mr. Tasse ने कहा कि red dwarf stars का व्यवहार sun की तुलना में "काफी अधिक **erratic** और **violent**" प्रतीत होता है।
- "The implication is that these stars can be rather inhospitable when it comes to life and exoplanets," because they have storms so powerful they could destroy the atmospheres of planets nearby, he added.  
"इसका मतलब है कि ये stars life और exoplanets के लिए **inhospitable** हो सकते हैं," क्योंकि इनके storms इतने powerful होते हैं कि यह पास के planets का **atmosphere** नष्ट कर सकते हैं, उन्होंने कहा।

PATRIOTIC IAS



## Swing, but do not miss

India's battle against tuberculosis will need renewed vigour and focus

**T**he World Health Organization's Global Tuberculosis Report 2025 was a mixed bag for India. While the tuberculosis (TB) incidence had the highest decline rate, globally, by 21% from 237 per lakh population in 2015 to 187 per lakh population in 2024, India remains among the countries with the highest rates of TB, bearing 25% of the world's burden. This also means that India recorded the maximum number of cases of TB in 2024. Within the country, Uttar Pradesh has the highest number of cases, followed by Maharashtra, Bihar and Madhya Pradesh. Delhi has the highest TB infection prevalence rate, though its actual case numbers are not that high. As far as multidrug-resistant TB (MDR-TB) is concerned, the scenario seems quite challenging. India, as per the report, also recorded the highest number of drug-resistant TB cases in 2024 – accounting for 32% of global MDR-TB and rifampicin-resistant (RR-TB) cases. With a treatment success rate for new and treated cases hovering at 90%, and at 77% for MDR/RR-TB cases started on second line treatment, the saga of the mixed bag continues. India's TB mortality rate dropped from 28 deaths per one lakh population in 2015 to 21 deaths per one lakh population in 2024. Despite this improvement, the figure is still over three times higher than the government's elimination target.

India has missed the target it set for itself, having advanced for itself the aim to eliminate TB – by 2025, five years before the global target of 2030. While incremental gains have not shored up to a dramatic result, this indeed has meant several million lives saved over the years. In this then, there is hope for a successful TB control programme in a country that has been battling TB for decades. Among the factors that have contributed to the gains include: harnessing advanced technologies, including AI and newer tools for molecular diagnosis and rapid detection of infection and resistance, facilitating better nutrition to prevent TB in susceptible populations, a scheme tailored to address drug-resistant forms of TB and the introduction of newer therapies (including BPaLM). The National TB Elimination Programme has set itself on a progressive path for the future, but unless crucial issues such as gaps in diagnosis (particularly in rural areas), taking care of stark socio-economic disparities and the high MDR/RR-TB case burden, frequent drug shortages and looming malnutrition, are addressed with vigour, Indian efforts will continue to stay in the realm of swing and miss.

मामले दर्ज किए — जो वैश्विक MDR-TB व RR-TB का 32% है।

- With a treatment success rate for new and treated cases hovering at **90%**, and at **77%** for MDR/RR-TB cases started on **second line treatment**, the saga of the mixed bag continues. नए और उपचारित मामलों के लिए उपचार सफलता दर **90%** के आसपास है, और **MDR/RR-TB** मामलों के दूसरी पंक्ति उपचार में **77%**, जिससे मिश्रित स्थिति बरकरार है।
- India's TB mortality rate dropped from **28 deaths per one lakh population in 2015** to **21 deaths per one lakh population in 2024**. भारत की TB मृत्यु दर **2015 में 28 प्रति लाख** से घटकर **2024 में 21 प्रति लाख** हो गई है।
- Despite this improvement, the figure is still **over three times higher** than the government's elimination target. इस सुधार के बावजूद, यह संख्या सरकार के उन्मूलन लक्ष्य से **तीन गुना से अधिक** है।
- India has missed the target it set for itself, having advanced for itself the aim to eliminate TB — by **2025**, five years before the global target of **2030**. भारत अपना लक्ष्य चूक गया है, जिसने वैश्विक लक्ष्य **2030** से पाँच वर्ष पहले **2025** तक TB उन्मूलन का लक्ष्य रखा था।

## Swing, but do not miss स्विंग करें, लेकिन चूकें नहीं

### Global Tuberculosis Report 2025 — India ग्लोबल ट्यूबरकुलोसिस रिपोर्ट 2025 — भारत

- The World Health Organization's Global Tuberculosis Report **2025** was a mixed bag for India.

विश्व स्वास्थ्य संगठन की ग्लोबल ट्यूबरकुलोसिस रिपोर्ट **2025** भारत के लिए मिश्रित रही।

- While the tuberculosis (TB) incidence had the highest decline rate, globally, by **21%** from **237 per lakh population in 2015** to **187 per lakh population in 2024**, India remains among the countries with the highest rates of TB, bearing **25% of the world's burden**.

जबकि **TB** की घटनाओं में वैश्विक स्तर पर **21%** की सबसे अधिक गिरावट आई — **2015 में 237 प्रति लाख** से **2024 में 187 प्रति लाख** — भारत अभी भी **25% वैश्विक बोझ** उठाते हुए उच्च-दर वाले देशों में शामिल है।

- This also means that India recorded the **maximum number of cases of TB in 2024**.

इसका अर्थ यह भी है कि भारत ने **2024 में TB के सबसे अधिक मामलों** को दर्ज किया।

- Within the country, **Uttar Pradesh** has the highest number of cases, followed by **Maharashtra, Bihar and Madhya Pradesh**.

देश में **उत्तर प्रदेश** में सबसे अधिक मामले हैं, उसके बाद **महाराष्ट्र, बिहार और मध्य प्रदेश** आते हैं।

- **Delhi** has the highest TB infection prevalence rate, though its actual case numbers are not that high.

**दिल्ली** में TB संक्रमण की व्यापकता सबसे अधिक है, हालांकि वास्तविक मामलों की संख्या उतनी अधिक नहीं है।

- As far as **multidrug-resistant TB (MDR-TB)** is concerned, the scenario seems quite challenging.

**MDR-TB** की बात करें तो स्थिति काफी चुनौतीपूर्ण दिखाई देती है।

- India, as per the report, also recorded the **highest number of drug-resistant TB cases in 2024** — accounting for **32%** of global MDR-TB and RR-TB cases.

रिपोर्ट के अनुसार, भारत ने **2024 में दवा-प्रतिरोधी TB के सबसे अधिक**



- While incremental gains have not shored up to a dramatic result, this indeed has meant several million lives saved over the years.  
चरणबद्ध सुधारों ने नाटकीय परिणाम तो नहीं दिए, पर इससे वर्षों में लाखों जीवन अवश्य बचे हैं।
- In this then, there is hope for a successful TB control programme in a country that has been battling TB for decades.  
इससे दशकों से TB से लड़ रहे देश में सफल TB नियंत्रण कार्यक्रम की उम्मीद दिखाई देती है।
- Among the factors that have contributed to the gains include: harnessing advanced technologies, including **AI** and newer tools for **molecular diagnosis** and rapid detection of infection and resistance, facilitating better **nutrition** to prevent TB in susceptible populations, a scheme tailored to address drug-resistant forms of TB and the introduction of newer therapies (including **BPaLM**).  
इन उपलब्धियों के कारकों में शामिल हैं: उन्नत तकनीकों का उपयोग जैसे **AI**, **molecular diagnosis**, संक्रमण तथा प्रतिरोध की त्वरित पहचान, संवेदनशील जनसंख्या में बेहतर **पोषण**, दवा-प्रतिरोधी TB के लिए विशेष योजनाएँ, और **BPaLM** जैसी नई उपचार विधियों की शुरुआत।
- The National TB Elimination Programme has set itself on a progressive path for the future, but unless crucial issues such as gaps in diagnosis (particularly in rural areas), taking care of stark socio-economic disparities and the high MDR-/RR-TB case burden, frequent **drug shortages** and looming **malnutrition**, are addressed with vigour, Indian efforts will continue to stay in the realm of swing and miss.  
राष्ट्रीय TB उन्मूलन कार्यक्रम ने भविष्य के लिए प्रगतिशील मार्ग अपनाया है, लेकिन जब तक **diagnosis gaps** (विशेषकर ग्रामीण क्षेत्रों में), सामाजिक-आर्थिक असमानताएँ, उच्च MDR-/RR-TB बोझ, बार-बार होने वाली **drug shortages**, और बढ़ते **कुपोषण** को मजबूत तरीके से संबोधित नहीं किया जाता, तब तक भारत के प्रयास अधूरे ही रहेंगे।

PATRIOTIC



# How is the global precision medicine market shaping up?

How can non-communicable diseases be prevented by using precision biotherapeutics?

**GS III: S&T**  
**Shambhavi Naik**

**The story so far:**

Several medical treatments, particularly for genetic ailments, rely on symptomatic management instead of correcting the causative issue. Precision biotherapeutics brings together genetic science, molecular biology, and data analytics to design therapies that identify and rectify the cause of illness.

**What are precision biotherapeutics?**

Precision biotherapeutics refers to medical interventions that are designed and optimised based on a patient's unique genetic, molecular, or cellular profile. The field draws on multiple cutting-edge technologies such as genomic and proteomic analysis — decoding a person's genetic and protein signatures to identify mutations or dysfunctions causing the disease; gene editing therapies — directly modifying genes to correct underlying problems (for example, CRISPR-based treatments for

blood disorders); mRNA and nucleic acid therapeutics — using RNA molecules to instruct cells to produce specific proteins or suppress harmful ones; monoclonal antibodies and biologics — laboratory-engineered molecules that bind to precise disease targets, such as cancer cells or viral protein; and AI-driven drug discovery which involves leveraging big data and machine learning to predict how molecules interact within the body.

**Why does India need it?**

Non-communicable diseases such as diabetes, cardiovascular illness, and cancers account for nearly 65% of deaths in the country. At the same time, the genetic diversity of India's population makes it one of the most complex testing grounds for new therapies. Sometimes, pharmaceuticals made and tested in foreign countries might not work effectively in the Indian context. By leveraging India's growing genomic research base, such as the IndiGen programme and GenomeIndia, treatments could be customised for local

genetic profiles. Moreover, precision biotherapeutics also holds the promise of shifting care to predictive, preventive, and personalised models.

**Where does India stand today?**

The Department of Biotechnology has identified precision biotherapeutics as one of the six focus areas under the Biotechnology for Economy, Environment, and Employment policy. Indian research institutions such as the Institute of Genomics and Integrative Biology, the National Institute of Biomedical Genomics, and the Translational Health Science and Technology Institute are leading efforts to map genetic diversity and disease susceptibility across populations. In the private sector, several biopharma companies are exploring precision therapies. For example, Biocon Biologics and Dr. Reddy's Laboratories are investing in biosimilars and monoclonal antibodies. Other companies exploring precision biotherapeutics include Immune1 Therapeutics, focused on

immuno-oncology; Bugworks Research, developing novel antibiotics; Akriya Biosciences, providing precision diagnostics for cancer; miBiome Therapeutics, working on patient-centric healthcare solutions; 4baseCare, a precision oncology firm with AI tools; and ImmunoACT, the first Indian company to bring CART technology to India.

However, challenges persist. India lacks a clear regulatory framework for the different technologies that form the basis of gene and cell therapies. Most guidelines limit the use of emerging technologies for therapeutic purposes, but the scope of therapy is not defined. Further, there is limited local manufacturing capacity for biologics and advanced therapies. The cost of precision drugs also remains prohibitive, restricting access to affluent urban patients.

**What are India's opportunities?**

India's own opportunities in precision biotherapeutics are vast. On the economy front, the global precision medicine market is projected to exceed \$22 billion by 2027. India's skilled workforce, data analytics strength, and cost advantage position it as a potential hub for affordable precision therapies.

Yet ethical and privacy concerns around genetic data remain unresolved. Without strict data protection and consent frameworks, genomic information could be misused.

*Shambhavi Naik is chairperson at Takshashila Institution's Health & Life Sciences Policy.*

## THE GIST

Precision biotherapeutics refers to medical interventions that are designed and optimised based on a patient's unique genetic, molecular, or cellular profile.

On the economy front, the global precision medicine market is projected to exceed \$22 billion by 2027.

Sometimes, pharmaceuticals made and tested in foreign countries might not work effectively in the Indian context. By leveraging India's growing genomic research base, such as the IndiGen programme and GenomeIndia, treatments could be customised for local genetic profiles.

## How is the global precision medicine market shaping up?

### वैश्विक प्रिसेजन मेडिसिन बाज़ार कैसे विकसित हो रहा है?

- **Several medical treatments, particularly for genetic ailments, rely on symptomatic management instead of correcting the causative issue.** कई चिकित्सीय उपचार, विशेष रूप से आनुवंशिक बीमारियों के लिए, लक्षणात्मक प्रबंधन पर निर्भर करते हैं बजाय कारणात्मक समस्या को ठीक करने के।
- **Precision biotherapeutics brings together genetic science, molecular biology, and data analytics** to design therapies that identify and rectify the cause of illness. **प्रेसिजन बायोथेरेप्यूटिक्स आनुवंशिक विज्ञान, आणविक जीवविज्ञान, और डेटा एनालिटिक्स** को एक साथ लाता है उन थेरेपी को डिजाइन करने के लिए जो बीमारी के कारण की पहचान और सुधार करती हैं।

## What are precision biotherapeutics?

### प्रेसिजन बायोथेरेप्यूटिक्स क्या हैं?

- **Precision biotherapeutics** refers to medical interventions that are designed and optimised based on a patient's unique **genetic, molecular, or cellular profile**. **प्रेसिजन बायोथेरेप्यूटिक्स** उन चिकित्सीय हस्तक्षेपों को संदर्भित करता है जो रोगी के अद्वितीय **आनुवंशिक, आणविक, या कोशिकीय प्रोफाइल** के आधार पर डिजाइन और अनुकूलित किए जाते हैं।
- The field draws on multiple **cutting-edge technologies** such as **genomic and proteomic analysis** — decoding a person's **genetic and protein signatures** to identify **mutations or dysfunctions** causing the disease; यह क्षेत्र कई **अत्याधुनिक तकनीकों** पर आधारित है जैसे **जीनोमिक और प्रोटीओमिक विश्लेषण** — व्यक्ति के **आनुवंशिक और प्रोटीन हस्ताक्षर** को डिकोड करके बीमारी पैदा करने वाले **म्यूटेशन या दोष** की पहचान करना;
- **gene editing therapies** — directly modifying genes to correct underlying problems (for example, **CRISPR-based treatments for blood disorders**); **जीन एडिटिंग थेरेपी** — अंतर्निहित समस्याओं को ठीक करने के लिए सीधे जीन संशोधित करना (उदाहरण के लिए, **रक्त विकारों** के लिए **CRISPR-आधारित उपचार**);
- **mRNA and nucleic acid therapeutics** — using **RNA molecules** to instruct cells to produce specific **proteins** or suppress harmful ones; **mRNA और न्यूक्लिक एसिड थेरेप्यूटिक्स** — **RNA अणुओं** का उपयोग करके कोशिकाओं को विशिष्ट **प्रोटीन** उत्पन्न करने या हानिकारक को दबाने का निर्देश देना;



- **monoclonal antibodies and biologics** — laboratory-engineered molecules that bind to precise **disease targets**, such as **cancer cells** or **viral protein**; **मोनोक्लोनल एंटीबॉडी** और **बायोलॉजिक्स** — प्रयोगशाला-इंजीनियर अणु जो सटीक रोग लक्ष्यों, जैसे **कैंसर कोशिकाएं** या **वायरल प्रोटीन** से बंधते हैं;
- and **AI-driven drug discovery** which involves leveraging **big data** and **machine learning** to predict how molecules interact within the body. और **AI-संचालित दवा खोज** जिसमें **बिग डेटा** और **मशीन लर्निंग** का उपयोग करके यह अनुमान लगाना शामिल है कि अणु शरीर के अंदर कैसे परस्पर क्रिया करते हैं।

## Why does India need it?

### भारत को इसकी आवश्यकता क्यों है?

- **Non-communicable diseases** such as **diabetes, cardiovascular illness, and cancers** account for nearly **65%** of deaths in the country. **गैर-संचारी रोग** जैसे **मधुमेह, हृदय रोग, और कैंसर** देश में लगभग **65%** मौतों के लिए जिम्मेदार हैं।
- At the same time, the **genetic diversity** of India's population makes it one of the most complex testing grounds for new therapies. साथ ही, **भारत** की आबादी की **आनुवंशिक विविधता** इसे नई थेरेपी के लिए सबसे जटिल परीक्षण स्थलों में से एक बनाती है।
- Sometimes, pharmaceuticals made and tested in foreign countries might not work effectively in the **Indian context**. कभी-कभी, विदेशी देशों में बने और परीक्षित फार्मास्यूटिकल्स **भारतीय संदर्भ** में प्रभावी ढंग से काम नहीं कर सकते।
- By leveraging India's growing **genomic research base**, such as the **IndiGen programme** and **GenomeIndia**, treatments could be customised for local **genetic profiles**. **भारत** के बढ़ते **जीनोमिक रिसर्च बेस**, जैसे **इंडीजेन कार्यक्रम** और **जीनोमइंडिया**, का लाभ उठाकर उपचार स्थानीय **आनुवंशिक प्रोफाइल** के लिए अनुकूलित किए जा सकते हैं।
- Moreover, **precision biotherapeutics** also holds the promise of shifting care to **predictive, preventive, and personalised** models. इसके अलावा, **प्रेसिजन बायोथेरेप्यूटिक्स** देखभाल को **पूर्वानुमानित, निवारक, और वैयक्तिकृत** मॉडल में बदलने का वादा भी करता है।

## Where does India stand today?

### भारत आज कहाँ खड़ा है?

- The **Department of Biotechnology** has identified **precision biotherapeutics** as one of the **six focus areas** under the **Biotechnology for Economy, Environment, and Employment** policy. **जैव प्रौद्योगिकी विभाग** ने **प्रेसिजन बायोथेरेप्यूटिक्स** को **अर्थव्यवस्था, पर्यावरण और रोजगार** के लिए **जैव प्रौद्योगिकी** नीति के तहत **छह फोकस क्षेत्रों** में से एक के रूप में पहचाना है।
- **Indian research institutions** such as the **Institute of Genomics and Integrative Biology**, the **National Institute of Biomedical Genomics**, and the **Translational Health Science and Technology Institute** are leading efforts to map **genetic diversity** and **disease susceptibility** across populations. **भारतीय शोध संस्थान** जैसे **जीनोमिक्स और इंटीग्रेटिव बायोलॉजी संस्थान**, **राष्ट्रीय बायोमेडिकल जीनोमिक्स संस्थान**, और **ट्रांसलेशनल हेल्थ साइंस एंड टेक्नोलॉजी इंस्टीट्यूट** आबादी में **आनुवंशिक विविधता** और **रोग संवेदनशीलता** को मैप करने के प्रयासों का नेतृत्व कर रहे हैं।
- In the **private sector**, several **biopharma companies** are exploring **precision therapies**. **निजी क्षेत्र** में, कई **बायोफार्मा कंपनियां** **प्रेसिजन थेरेपी** की खोज कर रही हैं।
- For example, **Biocon Biologics** and **Dr. Reddy's Laboratories** are investing in **biosimilars** and **monoclonal antibodies**. उदाहरण के लिए, **बायोकॉन बायोलॉजिक्स** और **डॉ. रेड्डीज लेबोरेटरीज बायोसिमिलर्स** और **मोनोक्लोनल एंटीबॉडी** में निवेश कर रही हैं।
- Other companies exploring **precision biotherapeutics** include **Immuneel Therapeutics**, focused on **immuno-oncology**; **प्रेसिजन बायोथेरेप्यूटिक्स** की खोज करने वाली अन्य कंपनियां शामिल हैं **इम्यूनील थेरेप्यूटिक्स**, जो **इम्यूनो-ऑन्कोलॉजी** पर केंद्रित है;



- **Bugworks Research**, developing **novel antibiotics**; बगवर्क्स रिसर्च, नई एंटीबायोटिक्स विकसित कर रही है;
- **Akrivia Biosciences**, providing **precision diagnostics** for **cancer**; अक्रिविया बायोसाइंसेज, कैंसर के लिए प्रेसिजन डायग्नोस्टिक्स प्रदान कर रही है;
- **miBiome Therapeutics**, working on **patient-centric healthcare solutions**; माइबायोम थेरेप्यूटिक्स, रोगी-केंद्रित स्वास्थ्य समाधान पर काम कर रही है;
- **4baseCare**, a **precision oncology** firm with **AI tools**; 4बेसकेयर, AI टूल्स वाली एक प्रेसिजन ऑन्कोलॉजी फर्म;
- and **ImmunoACT**, the **first Indian company** to bring **CAR-T technology** to **India**. और इम्यूनोएक्ट, CAR-T तकनीक को भारत लाने वाली पहली भारतीय कंपनी।
- However, **challenges** persist. हालांकि, चुनौतियां बनी हुई हैं।
- **India** lacks a clear **regulatory framework** for the different technologies that form the basis of **gene and cell therapies**. भारत में जीन और सेल थेरेपी के आधार बनाने वाली विभिन्न तकनीकों के लिए स्पष्ट नियामक ढांचा की कमी है।
- Most guidelines limit the use of **emerging technologies** for therapeutic purposes, but the scope of therapy is not defined. अधिकांश दिशानिर्देश उभरती तकनीकों के चिकित्सीय उपयोग को सीमित करते हैं, लेकिन थेरेपी का दायरा परिभाषित नहीं है।
- Further, there is limited **local manufacturing capacity** for **biologics** and **advanced therapies**. इसके अलावा, बायोलॉजिक्स और उन्नत थेरेपी के लिए सीमित स्थानीय विनिर्माण क्षमता है।
- The **cost** of **precision drugs** also remains **prohibitive**, restricting access to **affluent urban patients**. प्रेसिजन दवाओं की लागत भी निषेधात्मक बनी हुई है, जो पहुंच को समृद्ध शहरी रोगियों तक सीमित करती है।

## What are India's opportunities?

### भारत के अवसर क्या हैं?

- **India's own opportunities** in **precision biotherapeutics** are vast. प्रेसिजन बायोथेरेप्यूटिक्स में भारत के अपने अवसर विशाल हैं।
- On the **economy** front, the **global precision medicine market** is projected to exceed **\$22 billion** by **2027**. अर्थव्यवस्था के मोर्चे पर, वैश्विक प्रेसिजन मेडिसिन बाजार के 2027 तक \$22 बिलियन से अधिक होने का अनुमान है।
- **India's skilled workforce**, **data analytics strength**, and **cost advantage** position it as a potential hub for **affordable precision therapies**. भारत का कुशल कार्यबल, डेटा एनालिटिक्स ताकत, और लागत लाभ इसे किफायती प्रेसिजन थेरेपी के लिए संभावित हब के रूप में स्थापित करता है।
- Yet **ethical** and **privacy concerns** around **genetic data** remain unresolved. फिर भी आनुवंशिक डेटा को लेकर नैतिक और गोपनीयता चिंताएं अनसुलझी बनी हुई हैं।
- Without strict **data protection** and **consent frameworks**, **genomic information** could be misused. सख्त डेटा संरक्षण और सहमति ढांचे के बिना, जीनोमिक जानकारी का दुरुपयोग हो सकता है।



**Environment**

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# India to spruce up mechanisms for accessing climate finance

A new 'country platform' is expected to help India tap Green Climate Fund resources more easily; the fund has faced criticism from developing countries for its complex disbursement procedures and lack of technical support to avail it

GS III: Environment

MOB

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India was among the 13 countries and a regional alliance of African countries that announced plans to set up a national platform for "climate and nature finance" at a ministerial event during the COP30 under way in Belem, Brazil, on Saturday. This would be coordinated through the Green Climate Fund (GCF), an institutional mechanism that has been at work since 2015, to fund projects in developing countries to adapt to unfolding climate change and to invest in clean energy.

Despite being the world's largest institutional mechanism for disbursing funds for climate finance, with commitments worth \$19 billion, only a quarter of it has been properly allocated as of 2024. The GCF faces criticism from developing countries that its disbursement mechanisms are often difficult to comply with and there is limited technical support to avail these funds.

A stated goal of the GCF is to ensure that its funds are evenly split between adaptation and mitigation.

The Belem ministerial event, co-hosted by Brazil's Ministry of Finance and



The ministerial event on climate finance under way in Belem, Brazil, on Saturday. X/@THEGCF

the GCF, brought together Ministers and other senior government officials as well as international, national, public, and private climate finance leaders.

**New 'country platform'**  
While India already engages with the GCF, it is believed that a new "country platform" for "climate and nature finance" would help the country move away from a "fragmented approach" towards accessing funds.

This is especially significant in a year when calls from developing countries for prioritising adaptation and improving access to climate finance are particu-

larly resonant, especially on the ongoing proceedings of COP30. *The Hindu* reached out to the Environment Ministry for more clarity on the country platform but did not receive a comment until press time.

Halfway through negotiations on Saturday, India was leading developing countries' clamour for a focused discussion and road map on a section of the Paris Agreement called Article 9.1, which mandates that developed countries provide funds for mitigation and adaptation.

The announcement of such a platform also ties in with expectations that negotiators may finalise a list

of indicators that can be used to measure progress towards the so-called Global Goal on Adaptation (GGA). Progress on producing an agreed list of indicators has been difficult, with nearly 90 experts working over two years to narrow down a list of almost 10,000 potential indicators to a final set of just 100, which is supposed to be adopted at COP30, according to a report by Molly Lempriere, an analyst for Carbon Brief, an agency that tracks climate negotiations.

However, with India, among other countries expected to announce National Adaptation Plans,

there is greater vocal support and interest in having a concrete outcome on the GGA.

Announcing their country and regional platforms, representatives from the African Islands States Climate Commission (AISCC) – Cambodia, Colombia, India, Kazakhstan, Lesotho, Mongolia, Nigeria, Oman, Panama, Rwanda, the Dominican Republic, Togo, and South Africa – shared their vision and strategies for leveraging country platforms to accelerate climate action. This brings the number of platforms to 16, with the previously established Brazil Country Platform and Caribbean Regional Platform, according to a note from the GCF.

**GCF support for India**

As of August 2024, India has received commitment from the GCF for 11 projects worth \$782 million to mitigate and adapt to climate change in sectors, including water, clean energy, coastal, livelihood, transport, medium and small enterprises and climate start-ups. A bulk of the financing is in the form of concessional loans.

India's Environment Ministry is the primary access point (or the Nodal Designated Authority) for GCF-linked funding.

## India to spruce up mechanisms for accessing climate finance

भारत जलवायु फाइनेंस तक पहुँचने के तंत्रों को सुदृढ़ करने जा रहा है

- A new 'country platform' is expected to help India tap Green Climate Fund resources more easily; the fund has faced criticism from developing countries for its complex disbursement procedures and lack of technical support to avail it.

एक नया 'कंट्री प्लैटफॉर्म' अपेक्षित है कि भारत को ग्रीन क्लाइमेट फंड के संसाधनों का अधिक आसानी से लाभ उठाने में मदद करेगा; इस फंड को विकासशील देशों द्वारा इसकी जटिल वितरण



प्रक्रियाओं और इनको भुनाने के लिए तकनीकी समर्थन की कमी के लिए आलोचना का सामना करना पड़ा है।

- India was among the **13 countries** and a regional alliance of African countries that announced plans to set up a national platform for “climate and nature finance” at a ministerial event during the **COP30** under way in **Belem, Brazil**, on Saturday.  
**13 देशों** और अफ्रीकी देशों के एक क्षेत्रीय गठबंधन के बीच **भारत** भी था, जिन्होंने शनिवार को **बेलेम, ब्राज़ील** में चल रहे **COP30** के दौरान एक मंत्री स्तरीय कार्यक्रम में “क्लाइमेट और नेचर फाइनेंस” के लिए एक राष्ट्रीय प्लेटफॉर्म स्थापित करने की योजना की घोषणा की।
- This would be coordinated through the **Green Climate Fund (GCF)**, an institutional mechanism that has been at work since 2015, to fund projects in developing countries to adapt to unfolding climate change and to invest in clean energy.  
इसका समन्वय **ग्रीन क्लाइमेट फंड (GCF)** के माध्यम से किया जाएगा, एक संस्थागत तंत्र जो 2015 से कार्यरत है, ताकि विकासशील देशों में उभरते जलवायु परिवर्तन के अनुकूलन और स्वच्छ ऊर्जा में निवेश करने वाली परियोजनाओं को वित्तपोषित किया जा सके।
- Despite being the world’s largest institutional mechanism for disbursing funds for climate finance, with commitments worth **\$19 billion**, only a quarter of it has been properly allocated as of **2024**.  
जलवायु वित्त के लिए फंड वितरण करने वाले विश्व के सबसे बड़े संस्थागत तंत्र होने के बावजूद, जिसकी प्रतिबद्धताएँ **19 बिलियन डॉलर** के मूल्य की हैं, **2024** तक केवल इसका एक चौथाई ही सही तरह से आवंटित किया गया है।
- The **GCF** faces criticism from developing countries that its disbursement mechanisms are often difficult to comply with and there is limited technical support to avail these funds.  
विकासशील देशों की ओर से **GCF** की यह आलोचना है कि इसके वितरण तंत्रों का पालन अक्सर कठिन होता है और इन फंड्स का लाभ उठाने के लिए सीमित तकनीकी समर्थन उपलब्ध है।
- A stated goal of the **GCF** is to ensure that its funds are evenly split between adaptation and mitigation.  
**GCF** का एक घोषित लक्ष्य यह है कि उसके फंड को अनुकूलन और न्यूनीकरण के बीच समान रूप से बाँटा जाए।
- The Belem ministerial event, co-hosted by **Brazil’s Ministry of Finance** and the **GCF**, brought together Ministers and other senior government officials as well as international, national, public, and private climate finance leaders.  
बेलेम मंत्री स्तरीय कार्यक्रम, जिसका सह-आयोजन **ब्राज़ील की वित्त मंत्रालय** और **GCF** ने किया, ने मंत्रियों और अन्य वरिष्ठ सरकारी अधिकारियों के साथ-साथ अंतरराष्ट्रीय, राष्ट्रीय, सार्वजनिक और निजी जलवायु वित्त नेताओं को एकत्र किया।
- While **India** already engages with the **GCF**, it is believed that a new “country platform” for “climate and nature finance” would help the country move away from a “fragmented approach” towards accessing funds.  
जबकि **भारत** पहले से ही **GCF** के साथ जुड़ा है, माना जाता है कि “क्लाइमेट और नेचर फाइनेंस” के लिए नया “कंट्री प्लेटफॉर्म” देश को फंड तक पहुँचने में “खंडित दृष्टिकोण” से दूर ले जाने में मदद करेगा।
- This is especially significant in a year when calls from developing countries for prioritising adaptation and improving access to climate finance are particularly resonant, especially at the ongoing proceedings of **COP30**.  
यह विशेष रूप से महत्वपूर्ण है उस वर्ष में जब विकासशील देशों की ओर से अनुकूलन को प्राथमिकता देने और जलवायु वित्त तक पहुँच बेहतर करने की माँगें विशेष रूप से प्रभावशाली हैं, विशेषकर चल रही **COP30** की कार्यवाहियों में।
- The **Hindu** reached out to the **Environment Ministry** for more clarity on the country platform but did not receive a comment until press time.  
**द हिन्दू** ने कंट्री प्लेटफॉर्म पर और स्पष्टता के लिए **पर्यावरण मंत्रालय** से संपर्क किया लेकिन प्रेस समय तक कोई टिप्पणी प्राप्त नहीं हुई।
- Halfway through negotiations on Saturday, **India** was leading developing countries’ clamour for a focused discussion and road map on a section of the Paris Agreement called **Article 9.1**, which mandates that developed countries provide funds for mitigation and adaptation.  
शनिवार को वार्ताओं के बीच में, **भारत** विकासशील देशों की उस माँग का नेतृत्व कर रहा था जो



पेरिस समझौते के **Article 9.1** नामक अनुभाग पर एक केंद्रित चर्चा और रोडमैप की माँग करता है, जो विकसित देशों को न्यूनीकरण और अनुकूलन के लिए फंड प्रदान करने का अनिवार्य करता है।

- The announcement of such a platform also ties in with expectations that negotiators may finalise a list of indicators that can be used to measure progress towards the so-called **Global Goal on Adaptation (GGA)**.  
ऐसी प्लेटफॉर्म की घोषणा इस उम्मीद के साथ भी जुड़ी है कि वार्ताकार संभवतः उन संकेतकों की एक सूची को अंतिम रूप दे सकते हैं जिसका उपयोग तथाकथित **Global Goal on Adaptation (GGA)** की ओर प्रगति को मापने के लिए किया जा सकेगा।
- Progress on producing an agreed list of indicators has been difficult, with nearly **90 experts** working over two years to narrow down a list of almost **10,000 potential indicators** to a final set of just **100**, which is supposed to be adopted at **COP30**, according to a report by **Molly Lempriere**, an analyst for **Carbon Brief**, an agency that tracks climate negotiations.

संकेतकों की सहमत सूची तैयार करने में प्रगति कठिन रही है, लगभग **90 विशेषज्ञों** ने दो वर्षों में लगभग **10,000 संभावित संकेतकों** की सूची को घटाकर सिर्फ **100** के अंतिम सेट तक सीमित करने का काम किया, जिसे **COP30** में अपनाया जाना चाहिए, ऐसा **Molly Lempriere** की रिपोर्ट के अनुसार कहा गया है, जो **Carbon Brief** की एक विश्लेषक हैं, यह एजेंसी जलवायु वार्ताओं का ट्रैक रखती है।

- However, with **India**, among other countries expected to announce **National Adaptation Plans**, there is greater vocal support and interest in having a concrete outcome on the **GGA**.  
हालांकि, **भारत** सहित अन्य देशों के राष्ट्रीय अनुकूलन योजनाएँ घोषित करने की उम्मीद के साथ, **GGA** पर एक ठोस परिणाम की ओर अधिक मुखर समर्थन और रुचि है।
- Announcing their country and regional platforms, representatives from the **African Islands States Climate Commission (AISCC)** — Cambodia, Colombia, India, Kazakhstan, Lesotho, Mongolia, Nigeria, Oman, Panama, Rwanda, the Dominican Republic, Togo, and South Africa — shared their vision and strategies for leveraging country platforms to accelerate climate action.  
अपने देश और क्षेत्रीय प्लेटफॉर्म की घोषणा करते हुए, **African Islands States Climate Commission (AISCC)** के प्रतिनिधियों — कंबोडिया, कोलंबिया, **भारत**, कज़ाखस्तान, लेसोथो, मंगोलिया, नाइजीरिया, ओमान, पनामा, रवांडा, डोमिनिकन रिपब्लिक, टोगो और साउथ अफ्रीका — ने देशी प्लेटफॉर्मों का लाभ उठाकर जलवायु कार्रवाई को तेज करने के अपने दृष्टिकोण और रणनीतियाँ साझा कीं।

- This brings the number of platforms to **16**, with the previously established Brazil Country Platform and Caribbean Regional Platform, according to a note from the **GCF**.

इससे प्लेटफॉर्म की संख्या **16** हो जाती है, जिनमें पहले से स्थापित ब्राज़ील कंट्री प्लेटफॉर्म और कैरेबियन रीजनल प्लेटफॉर्म शामिल हैं, ऐसा **GCF** के एक नोट के अनुसार है।

- As of **August 2024**, **India** has received commitment from the **GCF** for **11 projects** worth **\$782 million** to mitigate and adapt to climate change in sectors, including water, clean energy, coastal, livelihood, transport, medium and small enterprises and climate start-ups.

**अगस्त 2024** तक, **भारत** ने जलवायु परिवर्तन से मुकाबला करने और अनुकूलन के लिए जल, स्वच्छ ऊर्जा, तटीय, आजीविका, परिवहन, मध्यम और लघु उद्यम और क्लाइमेट स्टार्ट-अप्स सहित क्षेत्रों में **11 परियोजनाओं** के लिए **GCF** से **782 मिलियन डॉलर** की प्रतिबद्धता प्राप्त की है।

- A bulk of the financing is in the form of **concessional loans**.  
वित्तपोषण का बड़ा हिस्सा **रियायती ऋणों** (concessional loans) के रूप में है।

- **India's Environment Ministry** is the primary access point (or the Nodal Designated Authority) for **GCF-linked** funding.  
**भारत का पर्यावरण मंत्रालय GCF-लिंक्ड** फंडिंग के लिए प्राथमिक पहुँच बिंदु (या नोडल नामित प्राधिकरण) है।



# An uncertain solar-powered future

In the wake of India's rapid push towards clean energy, upcoming solar power projects along the West Bengal-Jharkhand border have stirred up protests by thousands in both States. **Mourie Som** reports on those who believe it'll lead to an erasure of their livelihoods and access to their primary source of nutrition — fishing



Jharkhand residents Rita Roy (centre), and her friends, Renuka, Achinta and one of their daughters, at the reservoir of the Panchet Dam as their cattle graze on its banks and their spouses spread their nets to catch fish at dusk. **MOURIE SOM**

**T**wice a day every day for the last 20 years, 31-year-old Rita Roy and her two friends, Renuka and Achinta, would meet at the Panchet Dam to graze their cattle along the banks of the reservoir. From being long-time neighbours, they evolved into close friends after marrying fisherfolk in the same village in the Kallaosole block in Jharkhand's Dhanbad district, near the State's border with West Bengal.

"Where will we graze our cattle if the floating solar project goes through? The village doesn't have enough greenery to feed so many cattle. And most importantly, where will our husbands go fishing if the dam [reservoir] is out of bounds for us? We will simply not survive," Rita says, seated on the dam and gazing into the sun setting over the reservoir.

Their anxieties around losing access to the reservoir stem from the news of upcoming solar energy projects across the Panchet Dam site.

Panchet Dam is the last of the four multi-purpose dams built under the first phase of the Damodar Valley Corporation (DVC), inaugurated in 1959, the Panchet Dam was built mainly to control floods in the Damodar river, earlier known as the 'sorrow of Bengal' for its frequent and devastating floods since the 18th century. Jharkhand's Dhanbad district (that was previously in Bihar) lies on the northern side of the Panchet Dam, whereas West Bengal's Purulia district lies on its southern bank.

As the women talk, Rita's husband and other fisherfolk have become specks on the reservoir water as they cast their fishing nets from their boats. This is the livelihood of nearly 2,500 fisherfolk from Jharkhand and West Bengal.

"The next morning, we revisit our nets in the reservoir, collect the fish caught overnight, and sell those in the market. On a good day, we catch enough to earn ₹500 to ₹800 in a day. On a bad day, we come back empty-handed. It's a hunter's job after all; there is never any certainty," says 62-year-old Zahir Ansari of Ranganamta village in Jharkhand's Kallaosole, on his way to the reservoir with his nets. He has been fishing since he was 11 years old, he says. That is all he knows how to do. On October 15 this year, around 3,000 villagers from Jharkhand and West Bengal carried out a protest march on the dam from Mahishnadi check post in Bengal to the Panchet Dam Zero Point in Jharkhand to collectively protest against losing their livelihoods in the upcoming renewable energy projects.

## 'Displaced already'

The website of the DVC says that a ground-mounted solar photovoltaic (PV) plant with a capacity of 8 megawatts (MW) of alternating current (AC) is currently in the works in lands adjoining the dam, in West Bengal's Purulia district.

Additionally, a 155MW solar project is being planned on the dam's Jharkhand side by Green Valley Renewable Energy Limited (GVREL). GVREL is a joint venture between NTPC Green Energy Ltd. (NGL) that owns 51% and DVC that owns 49%. This project will have floating solar panels installed on the surface area of water in the reservoir and a ground-mounted solar PV.

Zahir says there is no work in these areas and many in both West Bengal and Jharkhand are in danger of losing their livelihoods if solar panels are installed on the reservoir. "Most of the male members in our villages fish, and sometimes we do odd jobs to keep our households running, he adds, worried that families will go hungry.

Standing in a circle around him, the other fisherfolk of Ranganamta village cheer in unison. One of them points out that they have seen officials painting numbers on the barks of trees in the adjoining forests. "Will they clear out the forests as well? What will happen to our *jol*, *jongol*, *joni* (water, forests, land) after the solar project is done?"

## ENVIRONMENT

## MOB

Where will we graze our cattle if the floating solar project goes through? ... Where will our husbands go fishing if the dam [reservoir] is out of bounds for us?

**RITA ROY**  
Resident,  
Kallaosole block in  
Jharkhand

he says. Mukhtar Ansari, 40, the president of the Damodar Valley Bastuhara Sangram Samity and a resident of the same village, calls himself "displaced". He recalls how his predecessors and his fellow villagers lived in a village that was submerged by the reservoir.

"When the dam was built in the 1950s, our grandparents and great-grandparents were all living on much larger areas of land. Many of them could not make an informed decision and trusted the compensation benefits that were promised by the DVC then," Mukhtar alleges.

He adds that the officials of the Jawaharlal Nehru Central government had explained to their forefathers that the Panchet dam is necessary to help prevent catastrophic floods downstream in West Bengal and that they would be giving their lands for "their brothers and sisters in Bengal".

According to DVC's archival annual reports, between the years 1957 and 1976, at least around 33,898.73 acres of land was acquired by the DVC in the lower valley, and 10,329 families were affected by the Panchet project. The reports further say that during this time period, field surveys of damages caused to the standing crops in the Panchet Dam area were completed; so was the rehabilitation of the displaced who had opted for land-for-land, or house-for-house, or compensation in cash. According to the reports, irrigation wells had also been sunk in some of the rehabilitated villages. Mukhtar claims the compensation was unfair for some. He clarifies that the protest is not just against the floating solar power project, but also against every new project being initiated by the DVC that requires land.

## India's push for decarbonisation

The DVC was born as independent India's first multipurpose river valley project in 1948 with the aim to control floods in the Damodar valley, generate hydel power, and for irrigation and navigation. Currently, they operate four dams: Tilaia on the Barakar river, Konar on the Konar river, Maithon on the Barakar river, and Panchet on the Damodar river. Panchet hydel station generates 80MW of hydel power, according to DVC's 2023-24 annual report. DVC also owns multiple thermal power stations across both States.

In 2023-2024, under Phase I, GVREL awarded contracts for 155 MW solar PV projects in and around Panchet Dam reservoir to Larsen & Toubro (75 MW PSPV at Panchet) and NCSL (80 MW). This is aside from the 8 MWAC ground-mounted solar

PV system already installed in the Panchet Dam area, by the DVC alone. Power generated from these solar PV systems will get transmitted to the national grid.

These are some of the first ventures by DVC into solar energy, originally a river management and hydel power body. This shift comes amid a global attempt to depart from fossil-fuel-based energy, and a few years after India presented five 'Panchamrit goals' at the Conference of the Parties (COP26) to the United Nations Framework Convention on Climate Change (UNFCCC) held in Glasgow, United Kingdom in 2021.

These targets include achieving 500 GW power from non-fossil sources by 2030, and meeting 50% of the country's energy requirements from renewable energy by 2030. As a result, the Central government is now aiming to rapidly decarbonise through energy generation from sources like solar, hydel, green hydrogen, and battery energy storage systems, and is trying to incentivise investments in these sectors.

## Lost land and documents

The demands being collectively put forth by dissenters of both States include "returning" of unused land from the DVC to the locals, scrapping of the solar power project, fulfilment of promises made to locals during the initiation of the Panchet hydel power projects, and a bridge from Bathnabri village to the Mahishnadi check point in Neturia block to help locals cross the reservoir.

Rajen Tudu, who is in his 50s and heads the Prakriti Bachao O Adivasi Bachao Mancha (translates to organisation to save nature and the tribal people) in Neturia block of West Bengal's Purulia, asks who the solar power project will serve and if it will lead to any development for those who live in the project areas.

"My grandfather used to tell me that in the 1950s, when government officials visited them to explain how the Panchet dam would work, they couldn't believe that a river like the Damodar could be broken. Many of them signed over their lands to the DVC thinking nothing would happen," Tudu says. He remembers stories from then: villagers said the water started gashed into their lands, swallowing it forever.

"We lost our homes at that time and settled on wasteland. Today, most of the displaced families still do not have land-holding documents for their current settlements. It has led to issues in getting Aadhar cards and caste certificates, it could also create problems during the Special Intensive Revi-

sion of our voters' lists," Tudu says. For many, the documents to prove they were given land were lost in the relocation.

Tudu stands near a stage built on a vast meadow in Neturia. Behind him is the Panchet Hill, considered sacred to the Santal tribals of the area. He is surrounded by innumerable tribal folks from hundreds of villages in Dhanbad and Purulia, who have gathered there in their finest Santal attire for the Marang Baru festival. He says that the hill, the jungles, rivers, and soil are worshipped as deities in the festival, and that these industrial projects severely affect tribal cultural practices by destroying their connection to nature. "We use the reservoir water for everything, from fishing, to cooking, bathing, cleaning, and washing our clothes. Our sacred burning ghats are also on the banks. Not being able to access the water would be a death sentence if the floating solar project goes through," 30-something Bibhuti Goral of Shalchura village chimes in, a baby on her shoulder.

## The paradox of development

Arup Chakraborty, the Trinamool MP of Bankura constituency, where the affected parts of Purulia district are located, asserted that a solar project cannot move forward without an accurate assessment of how it would affect locals.

"I understand that a solar project will be good for the nation's development and that it would help produce clean electricity. However, it cannot threaten people's livelihoods. Local villagers cannot be harmed over it," Chakraborty says.

On the other side of the State border, the MLA of Jharkhand's Birsa, Arup Chatterjee, of the Communist Party of India (Marxist-Leninist) Liberation, stated that the floating solar PV systems cannot be installed without the consent of all fisherfolk affected.

He adds that the work on the substation for the solar projects on the Jharkhand side started in October, and that around 25% of the work on the dam is complete. He claims that a river like the Damodar project, reportedly shelved in the 1990s, is being revived. People continue to protest against it.

A report by the data-research firm Land Conflict Watch on land-use conflicts in India's renewable energy (RE) projects says that in 45% of cases there is a lack of consultation with affected communities before land was awarded to projects, resulting in legal proceedings. In 29% cases, the projects were completed but protests continued. In another 29% cases, upcoming projects were facing protests. At least five projects across the country have been stalled due to protests. In one case, the RE project was scrapped due to protests, the report says.

"RE projects, especially solar, are land intensive. The Ministry of New and Renewable Energy estimates that a solar plant requires a minimum of 4 acres of land to generate one megawatt energy. India is a land-scarce country. Considering the scale and speed required by most RE projects, these industries are exempted from mandatory statutory requirements to assess social and environmental impact," Kumar Sambhav Shrivastava, founder of Land Conflict Watch and one of the authors of the report, says.

He adds that 48% of RE project conflicts in the study are situated wholly on 'common lands', which are not privately owned, but have historically been used and managed by indigenous communities, Dalits, Adivasis.

"The way forward is to consult the local communities and address their issues at the planning stage itself. Otherwise, investments get stalled, and eventually, the land conflict issues that we saw in the fossil fuel era will follow us into the renewable energy era," Sambhav says.

As of going to press, the DVC and GVREL did not respond to a request for a comment.

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Every afternoon, fisherfolk from West Bengal and Jharkhand sail to the middle of the Panchet reservoir to cast their nets. Fishing is the primary livelihood in the villages near the Panchet Dam. **MOURIE SOM**



## An uncertain solar-powered future एक अनिश्चित सौर-ऊर्जा आधारित भविष्य

- In the wake of India's rapid push towards clean energy, upcoming **solar power projects** along the West Bengal-Jharkhand border have stirred up protests by thousands in both States.  
भारत के स्वच्छ ऊर्जा की ओर तेज़ रुख के बीच, पश्चिम बंगाल-झारखंड सीमा के पास आने वाले **सौर ऊर्जा प्रोजेक्टों** ने दोनों राज्यों में हज़ारों लोगों के विरोध को जन्म दिया है।
- Moyurie Som reports on those who believe it'll lead to an erasure of their livelihoods and access to their primary source of nutrition — **fishing**.  
मोयुड़ी सोम उन लोगों पर रिपोर्ट करती हैं जिन्हें विश्वास है कि इससे उनकी आजीविका और उनके मुख्य पोषण स्रोत — **मछली पकड़ने** — तक पहुँच समाप्त हो जाएगी।
- Twice a day every day for the last 20 years, 31-year-old **Rita Roy** and her two friends met at the **Panchet Dam** to graze their cattle.  
पिछले 20 वर्षों से रोज़ दो बार, 31 वर्षीय **रीता रॉय** और उनकी दो सहेलियाँ **पंचेत बांध** पर अपनी गाय-भैंस चराने मिलती थीं।
- Their friendship grew after marrying **fisherfolk** in the same village in Jharkhand's **Kaliasole block**, near the West Bengal border.  
झारखंड के **कालियासोल ब्लॉक** के उसी गाँव में **मछुआरों** से विवाह करने के बाद उनकी दोस्ती और गहरी हो गई।
- "Where will we graze our cattle if the **floating solar project** goes through? And where will our husbands fish if the reservoir becomes out of bounds?" Rita says.  
रीता कहती हैं, "अगर **फ्लोटिंग सोलर प्रोजेक्ट** बन गया तो हम अपने पशु कहाँ चराएँगे? और हमारे पति मछली पकड़ने कहाँ जाएँगे?"
- Their anxieties stem from news of upcoming solar energy projects across the **Panchet Dam** site.  
उनकी चिंताएँ **पंचेत बांध** स्थल पर आने वाले सौर परियोजनाओं की खबर से हैं।
- Panchet Dam, the last of four multi-purpose dams under **Damodar Valley Corporation (DVC)**, was inaugurated in 1959 mainly to control floods in the **Damodar river**.  
1959 में उद्घाटित पंचेत बांध **दमोदर घाटी निगम (DVC)** की चार बहुउद्देशीय परियोजनाओं में अंतिम था और मुख्य रूप से **दमोदर नदी** में बाढ़ नियंत्रित करने के लिए बनाया गया था।
- Jharkhand's **Dhanbad** lies on the northern side of the dam, and West Bengal's **Purulia** district on the southern side.  
झारखंड का **धनबाद** बांध के उत्तरी और पश्चिम बंगाल का **पुरुलिया** दक्षिणी हिस्से में स्थित है।
- Nearly **2,500 fisherfolk** from both States depend on the reservoir for their livelihood.  
दोनों राज्यों के लगभग **2,500 मछुआरे** अपनी आजीविका के लिए इस जलाशय पर निर्भर हैं।
- "On a good day, we earn ₹500-₹800; on a bad day, nothing," says **Zahir Ansari**, 62, who has fished since age 11.  
62 वर्षीय **जहीर अंसारी** कहते हैं, "अच्छे दिन में ₹500-₹800 मिलते हैं, बुरे दिन कुछ नहीं।"
- On October 15, around **3,000 villagers** from both States marched from Bengal's Mahishnadi check post to Panchet Dam Zero Point to protest.  
15 अक्टूबर को दोनों राज्यों के लगभग **3,000 ग्रामीणों** ने विरोध मार्च किया।
- DVC's website says an **8 MWAC ground-mounted solar plant** is coming up in Purulia district.  
DVC की वेबसाइट कहती है कि पुरुलिया में **8 MWAC ग्राउंड-माउंटेड सोलर प्लांट** बन रहा है।
- A **155 MWAC solar project** is also being planned on the Jharkhand side by **Green Valley Renewable Energy Ltd. (GVREL)**, a JV of NGEL (51%) and DVC (49%).  
झारखंड में **155 MWAC सोलर प्रोजेक्ट** **GVREL** द्वारा बनाया जा रहा है, जो NGEL (51%) और DVC (49%) का संयुक्त उपक्रम है।
- This includes **floating solar panels** on the reservoir and a ground-mounted system.  
इसमें जलाशय पर **फ्लोटिंग सोलर पैनल** और ज़मीन पर सौर सिस्टम शामिल हैं।
- Zahir says most families depend only on fishing and have no alternative livelihood; solar installations will destroy this.



जहीर कहते हैं कि ज़्यादातर परिवार मछली पकड़ने पर ही निर्भर हैं और सौर परियोजना से यह समाप्त हो जाएगा।

- Villagers have seen officials marking trees, sparking fears of losing their **jol, jongol, jomi (water, forest, land)**.  
ग्रामीणों ने अधिकारियों को पेड़ों पर नंबर लिखते देखा है, जिससे उनके **जोल, जंगल, जोमी (पानी, जंगल, ज़मीन)** खोने का डर बढ़ गया है।
- **Mukhtar Ansari**, president of a local organisation, says he is already “displaced” due to the dam constructed in the 1950s.  
**मुख्तार अंसारी** कहते हैं कि वह पहले ही 1950 के दशक में बने बांध के कारण “विस्थापित” हो चुके हैं।
- He alleges their forefathers were misinformed and forced to give land without understanding the consequences.  
उनका आरोप है कि उनके पूर्वजों को गलत जानकारी दी गई और उन्हें बिना समझे ज़मीन देनी पड़ी।
- DVC archival reports (1957–1976) say **33,898 acres** were acquired and **10,339 families** affected.  
DVC रिपोर्ट (1957–1976) के अनुसार **33,898 एकड़** भूमि अधिग्रहित हुई और **10,339 परिवार** प्रभावित हुए।
- Some compensation was unfair and many documents were lost in relocation, causing problems with **Aadhar, caste certificates** and voter lists.  
कई मुआवज़े अनुचित थे और विस्थापन में दस्तावेज़ खो गए, जिससे **आधार, जाति प्रमाणपत्र** और मतदाता सूची में समस्याएँ हुईं।
- Tribals worship **Panchet Hill, rivers, forests**, and say projects will destroy their cultural practices.  
आदिवासी **पंचेत पहाड़ी, नदियाँ, जंगल** पूजते हैं और कहते हैं कि परियोजनाएँ उनकी सांस्कृतिक परंपराएँ नष्ट कर देंगी।
- “Reservoir water sustains our entire life — fishing, cooking, bathing, washing,” says **Bibhuti Gorai**.  
**बिभूति गोरौ** कहती हैं, “जलाशय का पानी हमारी सारी ज़रूरतें पूरी करता है — मछली पकड़ना, खाना बनाना, नहाना, कपड़े धोना।”
- Blocking access to water would be a “death sentence,” villagers say.  
ग्रामीण कहते हैं कि पानी की पहुँच रोकना “मौत का फरमान” होगा।  
Local MP **Arup Chakraborty** says solar projects cannot threaten people’s livelihoods.  
स्थानीय सांसद **अरूप चक्रवर्ती** कहते हैं कि सौर परियोजनाएँ लोगों की आजीविका नहीं छीन सकतीं।
- Jharkhand MLA **Arup Chatterjee** says floating solar cannot be installed without consent of all fisherfolk.  
झारखंड के विधायक **अरूप चटर्जी** कहते हैं कि फ्लोटिंग सोलर बिना सभी मछुआरों की सहमति के नहीं लग सकता।
- Work on the Jharkhand side has started, and **25%** of land work is complete.  
झारखंड पक्ष में काम शुरू हो चुका है और **25%** भूमि कार्य पूरा हो गया है।
- A shelved **Tailpool Dam project** is allegedly being revived, triggering more protests.  
रिपोर्ट है कि रद्द किया गया **टेलपूल बांध प्रोजेक्ट** फिर से शुरू किया जा रहा है।  
Land Conflict Watch reports that **45%** of renewable energy projects lacked community consultation, leading to legal issues.  
लैंड कॉन्फ्लिक्ट वॉच के मुताबिक **45%** नवीकरणीय ऊर्जा परियोजनाओं में समुदाय की सहमति नहीं ली गई।
- At least **5 projects** nationwide were stalled due to protests; one was scrapped entirely.  
देश में कम से कम **5 परियोजनाएँ** विरोध के कारण रुकीं और एक पूरी तरह रद्द हुईं।
- Solar projects are **land intensive**, needing at least **4 acres per megawatt**, making land issues inevitable in land-scarce India.  
सौर परियोजनाएँ **भूमि-गहन** हैं और प्रति मेगावाट **4 एकड़** चाहिए — भूमि की कमी वाले भारत में यह समस्या बढ़ाती है।
- **48%** of renewable energy project conflicts involve **common lands**, historically used by tribes, Dalits and indigenous groups.



48% संघर्ष कॉमन लैंड से जुड़े हैं, जिनका उपयोग परंपरागत रूप से आदिवासियों और दलितों ने किया है।

- Experts say conflicts will keep stalling projects unless communities are included during planning.  
विशेषज्ञ कहते हैं कि जब तक समुदायों को योजना में शामिल नहीं किया जाएगा, संघर्ष परियोजनाओं को रोकते रहेंगे।
- As of going to press, **DVC and GVREL** did not respond to requests for comment.  
प्रेस तक जाने तक **DVC और GVREL** ने प्रतिक्रिया नहीं दी।

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## Army sets up three new garrisons near the strategic **Siliguri Corridor**

**GS III: Internal Security**

**Saurabh Trivedi**  
NEW DELHI

Amid shifting regional dynamics following the change of regime in Bangladesh and concerns over China's growing presence near the vulnerable Siliguri Corridor, the Indian Army has reinforced its eastern frontier by establishing three new garrison locations.

The new establishments comprise the Lachit Borphukan Military Station in Assam's Dhubri district and forward bases at Kishanganj in Bihar and Chopra in West Bengal, all sited close to the India-Bangladesh border.

A senior defence official said the move was essential given the evolving security environment. The Siliguri Corridor, a narrow land link to India's eight northeastern States, is strategically crucial, and the additional garrisons will enhance surveillance in the region, the official added.

The newly operational stations are expected to strengthen the Army's operational readiness and im-



Indian Army troops, alongside Special Forces, MARCOS, Garud and Arunachal Scouts, participate in Exercise Poorvi Prachand Prahar in Arunachal Pradesh. SPECIAL ARRANGEMENT

prove coordination with the Border Security Force, which guards the Bangladesh frontier.

Lieutenant-General R. C. Tiwari, GOC-in-C, Eastern Command, recently visited the new garrisons, interacting with troops and praising their professionalism and rapid efforts in operationalising the bases. He urged them to remain vigilant and maintain high preparedness levels.

Wing Commander Himanshu Tiwari, Chief PRO, MoD Kolkata, said Lt.-Gen. Tiwari also laid the foundation stone of the Lachit Borphukan Military Station at Bamunigaon,

named after the Ahom commander noted for his leadership.

The Army acknowledged the Assam government and local administration for their support in enabling the rapid establishment of the station, Mr. Tiwari added.

Union Home Minister Amit Shah has repeatedly expressed concern over demographic changes in border districts, which he has attributed to illegal immigration from Bangladesh.

Rampant development of border infrastructure by China along the Line of Actual Control in Arunachal

Pradesh remains a significant concern. In June, China hosted a trilateral foreign office consultation with Pakistani and Bangladeshi counterparts in Kunming, an event viewed by some observers as an attempt to build regional linkages without India's participation.

The Tri-Shakti Corps, charged with guarding Sikkim and the corridor, already fields robust defensive assets, including Rafale jets deployed at Hashimara, BrahMos missiles, and advanced air-defence systems.

The establishment of the new garrisons comes as India steps up military activity in the Northeast, including a major Indian Air Force flying display in Assam and the Army exercise Poorvi Prachand Prahar near the LAC in Arunachal Pradesh.

Separately, on November 8, a Pakistan Navy ship visited Chattogram port in Bangladesh, the first such visit since 1971, followed by meetings between Pakistan's Navy chief and Bangladesh's Army chief to discuss defence cooperation.



## Army sets up three new garrisons near the strategic Siliguri Corridor सेना ने सामरिक सिलीगुड़ी कॉरिडोर के पास तीन नए गैरीसन स्थापित किए

- Army sets up three new garrisons  
सेना ने तीन नए गैरीसन स्थापित किए
- near the strategic Siliguri Corridor  
सामरिक सिलीगुड़ी कॉरिडोर के पास
- Amid shifting regional dynamics following the change of regime in **Bangladesh** and concerns over **China's growing presence** near the vulnerable **Siliguri Corridor**, the Indian Army has reinforced its eastern frontier by establishing three new garrison locations.  
बांग्लादेश में शासन परिवर्तन के बाद बदलते क्षेत्रीय समीकरणों और संवेदनशील सिलीगुड़ी कॉरिडोर के पास चीन की बढ़ती उपस्थिति को लेकर चिंताओं के बीच, भारतीय सेना ने तीन नए गैरीसन स्थापित करके अपनी पूर्वी सीमा को मजबूत किया है।
- The new establishments comprise the **Lachit Borphukan Military Station** in Assam's **Dhubri district** and forward bases at **Kishanganj in Bihar** and **Chopra in West Bengal**, all sited close to the India-Bangladesh border.  
नए प्रतिष्ठानों में असम के धुबरी जिले में लाचिit बोर्फुकन मिलिट्री स्टेशन, बिहार के किशनगंज और पश्चिम बंगाल के चोपड़ा में अग्रिम ठिकाने शामिल हैं, जो सभी भारत-बांग्लादेश सीमा के निकट स्थित हैं।
- A senior defence official said the move was essential given the evolving security environment.  
एक वरिष्ठ रक्षा अधिकारी ने कहा कि बदलते सुरक्षा माहौल को देखते हुए यह कदम आवश्यक था।
- The **Siliguri Corridor**, a narrow land link to India's eight northeastern States, is strategically crucial, and the additional garrisons will enhance **surveillance** in the region, the official added.  
सिलीगुड़ी कॉरिडोर, जो भारत के आठ पूर्वोत्तर राज्यों को जोड़ने वाली संकरी भूमि कड़ी है, सामरिक रूप से अत्यंत महत्वपूर्ण है, और नए गैरीसन क्षेत्र में निगरानी बढ़ाएंगे, अधिकारी ने कहा।
- The newly operational stations are expected to strengthen the Army's **operational readiness** and improve coordination with the **Border Security Force**, which guards the Bangladesh frontier.  
नए संचालित स्टेशन सेना की संचालनात्मक तत्परता को मजबूत करने और बीएसएफ (जो बांग्लादेश सीमा की रक्षा करती है) के साथ समन्वय को बेहतर बनाने की उम्मीद है।
- **Lieutenant-General R. C. Tiwari**, GOC-in-C, Eastern Command, recently visited the new garrisons, interacting with troops and praising their professionalism and rapid efforts in operationalising the bases.  
लेफ्टिनेंट जनरल आर. सी. तिवारी, जीओसी-इन-सी, पूर्वी कमान, ने हाल ही में नए गैरीसनों का दौरा किया, सैनिकों से बातचीत की और बेस को तेज़ी से सक्रिय करने में उनकी पेशेवर क्षमता और प्रयासों की प्रशंसा की।
- He urged them to remain vigilant and maintain high preparedness levels.  
उन्होंने उन्हें सतर्क रहने और उच्च स्तर की तैयारी बनाए रखने का आग्रह किया।
- **Wing Commander Himanshu Tiwari**, Chief PRO, MoD Kolkata, said Lt.-Gen. Tiwari also laid the foundation stone of the **Lachit Borphukan Military Station** at **Bamunigaon**, named after the **Ahom commander** noted for his leadership.  
विंग कमांडर हिमांशु तिवारी, मुख्य पीआरओ, रक्षा मंत्रालय कोलकाता, ने कहा कि लेफ्टिनेंट जनरल तिवारी ने बामुनिगांव में लाचिit बोर्फुकन मिलिट्री स्टेशन का शिलान्यास भी किया, जिसका नाम नेतृत्व के लिए प्रसिद्ध अहोम कमांडर पर रखा गया है।
- The Army acknowledged the **Assam government** and local administration for their support in enabling the rapid establishment of the station, Mr. Tiwari added.  
श्री तिवारी ने कहा कि सेना ने स्टेशन की त्वरित स्थापना में सहयोग के लिए असम सरकार और स्थानीय प्रशासन को धन्यवाद दिया।
- **Union Home Minister Amit Shah** has repeatedly expressed concern over **demographic changes** in border districts, which he has attributed to **illegal immigration** from Bangladesh.



केंद्रीय गृह मंत्री अमित शाह ने सीमा जिलों में जनसांख्यिकीय बदलावों को लेकर बार-बार चिंता जताई है, जिन्हें उन्होंने बांग्लादेश से अवैध प्रवास के कारण बताया है।

- Rampant development of border infrastructure by **China** along the **Line of Actual Control** in Arunachal Pradesh remains a significant concern.  
अरुणाचल प्रदेश में वास्तविक नियंत्रण रेखा के साथ चीन द्वारा सीमा ढांचे का तेज़ विकास एक महत्वपूर्ण चिंता बनी हुई है।
- In June, China hosted a **trilateral foreign office consultation** with Pakistani and Bangladeshi counterparts in **Kunming**, an event viewed by some observers as an attempt to build **regional linkages** without India's participation.  
जून में, चीन ने कुनमिंग में पाकिस्तान और बांग्लादेश के अधिकारियों के साथ त्रिपक्षीय विदेश कार्यालय परामर्श आयोजित किया, जिसे कुछ विश्लेषकों ने भारत की भागीदारी के बिना क्षेत्रीय संपर्क बनाने के प्रयास के रूप में देखा।
- The **Tri-Shakti Corps**, charged with guarding **Sikkim** and the corridor, already fields robust defensive assets, including **Rafale jets** deployed at Hashimara, **BrahMos missiles**, and advanced **air-defence systems**.  
त्रिशक्ति कोर, जो सिक्किम और कॉरिडोर की रक्षा करती है, पहले से ही मजबूत रक्षा संसाधनों से लैस है, जिनमें हासीमारा में तैनात रफाल जेट, ब्रह्मोस मिसाइलें, और उन्नत वायु-रक्षा प्रणाली शामिल हैं।
- The establishment of the new garrisons comes as India steps up **military activity** in the Northeast, including a major **Indian Air Force flying display** in Assam and the Army exercise **Poorvi Prachand Prahar** near the LAC in Arunachal Pradesh.  
नए गैरीसनों की स्थापना उस समय हुई है जब भारत पूर्वोत्तर में सैन्य गतिविधियाँ बढ़ा रहा है, जिसमें असम में भारतीय वायुसेना का फ्लाईंग डिस्प्ले और अरुणाचल प्रदेश में एलएसी के पास सेना का अभ्यास पूर्वी प्रचंड प्रहार शामिल है।
- Separately, on November 8, a **Pakistan Navy ship** visited **Chattogram port** in Bangladesh, the first such visit since 1971, followed by meetings between Pakistan's Navy chief and Bangladesh's Army chief to discuss **defence cooperation**.  
अलग से, 8 नवंबर को पाकिस्तान नौसेना का एक जहाज़ बांग्लादेश के चटग्राम बंदरगाह पहुँचा, जो 1971 के बाद पहली ऐसी यात्रा थी। इसके बाद पाकिस्तान नौसेना प्रमुख और बांग्लादेश सेना प्रमुख के बीच रक्षा सहयोग पर चर्चा के लिए बैठकें हुईं।