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THE HINDU NEWSPAPER

31 JULY 2026

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PCS Special:	31 July
31J7	Rajnath felicitates all women crew for sailing expedition राजनाथ ने नौकायन अभियान के लिए सर्व-महिला दल को सम्मानित किया



Rajnath felicitates all women crew for sailing expedition

Defence Minister Rajnath Singh on Thursday felicitated nine women officers of the Indian Army, Navy, and Air Force for successfully completing the country's first-ever Tri-Service all-women circumnavigation sailing expedition – 'Samudra Pradakshina'. He described their achievement as a shining example of Nari Shakti and jointness among the armed forces. Mr. Singh spoke to the officers in New Delhi and commended them for completing the 314-day voyage aboard the Indian Army Sailing Vessel (IASV) Triveni. They sailed nearly 25,500 nautical miles across four oceans.

31J7. Rajnath felicitates all women crew for sailing expedition

राजनाथ ने नौकायन अभियान के लिए सर्व-महिला दल को सम्मानित किया

Defence Minister Rajnath Singh on Thursday felicitated **nine women officers of the Indian Army, Navy, and Air Force** for successfully completing the country's **first-ever Tri-Service all-women circumnavigation sailing expedition — 'Samudra Pradakshina'**.

रक्षा मंत्री राजनाथ सिंह ने गुरुवार को भारतीय सेना, नौसेना और वायु सेना की नौ महिला अधिकारियों को देश के पहले त्रि-सेवा (Tri-Service) सर्व-महिला विश्व-परिक्रमा नौकायन अभियान — **'समुद्र प्रदक्षिणा'** — को सफलतापूर्वक पूरा करने पर सम्मानित किया।

Mr. Singh spoke to the officers in **New Delhi** and commended them for completing the **314-day voyage aboard the Indian Army Sailing Vessel (IASV) Triveni**.

श्री सिंह ने नई दिल्ली में अधिकारियों से बातचीत की और इंडियन आर्मी सेलिंग वेसल

(IASV) त्रिवेणी पर 314 दिनों की यात्रा सफलतापूर्वक पूरी करने के लिए उनकी सराहना की।

- They sailed nearly **25,500 nautical miles** across **four oceans**.

उन्होंने चार महासागरों में लगभग 25,500 समुद्री मील (nautical miles) की यात्रा की।





GS Paper 1: Society	31 July 2026
TOPICS COVERED	
31J7	The rise of the cow belt and the politics of majoritarian power गौ-क्षेत्र (काउ बेल्ट) का उदय और बहुसंख्यकवादी सत्ता की राजनीति

The rise of the cow belt and the politics of majoritarian power

An excerpt from *Heartland Rising: The Making of Majoritarian India* examines the cow belt's growing political weight and its role in shaping majoritarian politics; it explores the intersections of demography, education, religion and electoral power

GS I: Society

Javed Gaya

‘The Rise of the Cow Belt’
Page 94-96

It is relevant that Uttar Pradesh and Bihar have consistently been privileged, that their chronic failure to develop is concealed under a carapace of opacity, hiding important aspects of State development in order to enhance the weightage it would receive under the Finance Commission. The Union government has deliberately manipulated and diluted the data for this purpose. To take one example, there is the matter of literacy rates. In Uttar Pradesh, the literacy rate appears to have increased substantially from 1951 to 2011, from around 12 per cent to 68 per cent. However, one must be wary of such figures, as the definition India employs to define a literate person is an outlier. To be considered literate in India, one only has to be able to read and write their own name; this requires a very limited notion of the alphabet. If your name is Shiv, for example, you only need to know four letters. The Annual Status of Education Report (ASER) released in January 2024 shows that more than 50 per cent of fourteen-to eighteen-year-old children in rural India are unable to solve a simple three-digit division problem that is taught in class III. Literacy skills are not much better, as from the same sample over 25

per cent were unable to read class II level textbooks and just shy of 50 per cent could not read sentences in English. Of those who could read, 26.5 per cent did not understand what they were reading. These are very damning statistics and point to population growth being an impending disaster rather than the much-vaunted demographic dividend envisaged by economists and politicians.

In this context, the priorities of State governments, and particularly that of Uttar Pradesh, are relevant.

In 2022, a new session commenced in Uttar Pradesh, but school children had no books as the government alleged it had insufficient funds to float a tender. School teachers complained that in the absence of new books, they had to collect books distributed to children in the previous school session.

However, the Uttar Pradesh government seems to have ample funds for spending on religious affairs. The Department of Religious Affairs had forwarded a budget of 1,100 crores for FY 2022-23. This is to be contrasted with the more parsimonious allocations of previous years – a paltry 32.5 crores was spent in 2017-18, which rose to

604.88 crores in 2021-22.

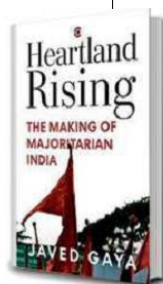
These priorities have to be seen in light of the vainglorious narrative that the Union government seeks to project regarding the incipient digital and knowledge economy. This seems rather fanciful given the absence of any desire to impart basic skills of literacy and numeracy; post-COVID, some 51,000 government schools have shut down without there being any express intention of replacing them. There is much excitement about digital learning, but this disregards the fact that only around 50 per cent of Indian households have access to the internet, and that figure is only 37 per cent in rural India. So, it is evident that education is not a priority and whatever resources the Uttar Pradesh

government has are directed towards promoting greater religiosity, a fact that portends the future of the cow belt. With the grandiose consecration of the Ram temple at Ayodhya, the theme of religious tourism is being projected as the ‘desideratum’ for Uttar Pradesh in terms of business and employment generation, but it is something that even the electorate of Faizabad roundly rejected in 2024.

This is the preparatory ground for the emergence of a

significant politician from the cow belt, a national leader who would lead post the present Prime Minister, someone like Yogi Adityanath who has shown great fidelity to the principles of Hindutva. Post the 2024 general elections and, with rumours of there having been a falling out between Yogi and the Centre, this trajectory does not seem as self-evident as it once was, and much will hinge on the Uttar Pradesh elections in 2027.

With the emergence of the cow belt as the cynosure for the new nationalism, and with the prospect of delimitation looming, one discerns a new and unsettling diffidence amongst public intellectuals as well as politicians from the South, on the inviolability of the formula of ‘One Man, One Vote’, the signature tune of majoritarianism. In fact, what Gopalkrishna Gandhi has urged is postponing delimitation until the cow belt’s population growth comes under control (which may never happen). Clever contrivances suggested by him, such as the ‘Cambridge Compromise’, look suspiciously like the concerns Ivor Jennings, the constitutional lawyer, had alluded to in the 1950s, that in a post-colonial society, ‘a narrow franchise, indirect elections, tribal representations may all be [seen as] quite sensible.’ (Excerpted with permission from *Heartland Rising: The Making of Majoritarian India* by Javed Gaya, published by Context-Westland Books)



31J7. The rise of the cow belt and the politics of majoritarian power

गौ-क्षेत्र (काउ बेल्ट) का उदय और बहुसंख्यकवादी सत्ता की राजनीति

- In Uttar Pradesh, the literacy rate appears to have increased substantially from 1951 to 2011, from around 12 per cent to 68 per cent.

उत्तर प्रदेश में 1951 से 2011 के बीच साक्षरता दर लगभग 12 प्रतिशत से बढ़कर 68 प्रतिशत हो गई प्रतीत होती है।

- However, one must be wary of such figures, as the definition India employs to define a literate person is an outlier.

किन्तु ऐसे आँकड़ों के प्रति सावधानी बरतनी चाहिए, क्योंकि भारत में साक्षर व्यक्ति की परिभाषा अन्य देशों की तुलना में असामान्य है।

- To be considered literate in India, one only has to be able to read and write their own name; this requires only a very limited knowledge of the alphabet.

भारत में किसी व्यक्ति को साक्षर माने जाने के लिए केवल अपना नाम पढ़ना और लिखना आना पर्याप्त है; इसके लिए वर्णमाला का अत्यंत सीमित ज्ञान ही आवश्यक होता है।



- If your name is **Shiv**, for example, you only need to know **four letters**.
उदाहरण के लिए यदि आपका नाम शिव है, तो आपको केवल चार अक्षरों का ज्ञान होना पर्याप्त है।
- The **Annual Status of Education Report (ASER)** released in **January 2024** shows that more than **50 per cent of fourteen-to-eighteen-year-old** children in rural India are unable to solve a simple **three-digit division** problem that is taught in **Class III**.
जनवरी 2024 में जारी वार्षिक शिक्षा स्थिति रिपोर्ट (ASER) के अनुसार, ग्रामीण भारत में 14 से 18 वर्ष आयु के 50 प्रतिशत से अधिक बच्चे कक्षा III में पढ़ाए जाने वाले तीन अंकों के भाग के एक साधारण प्रश्न को हल करने में सक्षम नहीं हैं।
- Literacy skills** are not much better, as from the same sample over **25 per cent** were unable to read **Class II** level textbooks and just shy of **50 per cent** could not read sentences in **English**.
साक्षरता कौशल की स्थिति भी अधिक बेहतर नहीं है, क्योंकि इसी नमूने में 25 प्रतिशत से अधिक बच्चे कक्षा II स्तर की पाठ्यपुस्तकें नहीं पढ़ सके, जबकि लगभग 50 प्रतिशत बच्चे अंग्रेज़ी के वाक्य पढ़ने में असमर्थ थे।
- Of those who could read, **26.5 per cent** did not understand what they were reading.
जो बच्चे पढ़ सकते थे, उनमें से 26.5 प्रतिशत यह समझने में असफल रहे कि वे क्या पढ़ रहे हैं।
- In **2022**, a new academic session commenced in **Uttar Pradesh**, but school children had no books as the government alleged it had insufficient funds to float a tender.
2022 में उत्तर प्रदेश में नया शैक्षणिक सत्र प्रारम्भ हुआ, किन्तु विद्यालयी बच्चों को पुस्तकें उपलब्ध नहीं कराई जा सकीं, क्योंकि सरकार का कहना था कि निविदा जारी करने के लिए उसके पास पर्याप्त धनराशि नहीं थी।
- School teachers complained that in the absence of new books, they had to collect books distributed to children in the previous school session.
विद्यालय के शिक्षकों ने शिकायत की कि नई पुस्तकें उपलब्ध न होने के कारण उन्हें पिछले शैक्षणिक सत्र में वितरित की गई पुस्तकों को वापस एकत्र करना पड़ा।
- However, the **Uttar Pradesh government** seems to have ample funds for spending on **religious affairs**.
किन्तु उत्तर प्रदेश सरकार के पास धार्मिक कार्यों पर व्यय करने के लिए पर्याप्त धनराशि उपलब्ध प्रतीत होती है।
- The **Department of Religious Affairs** had forwarded a budget of **₹1,100 crore** for **FY 2022–23**.
धार्मिक कार्य विभाग ने वित्तीय वर्ष 2022–23 के लिए ₹1,100 करोड़ का बजट प्रस्तावित किया था।
- Post-COVID, some **51,000 government schools** have shut down without there being any express intention of replacing them.
कोविड के बाद लगभग 51,000 सरकारी विद्यालय बंद हो चुके हैं, जबकि उनके स्थान पर नए विद्यालय स्थापित करने का कोई स्पष्ट इरादा दिखाई नहीं देता।
- There is much excitement about **digital learning**, but this disregards the fact that only around **50 per cent** of Indian households have access to the **internet**, and that figure is only **37 per cent in rural India**.
डिजिटल शिक्षण को लेकर अत्यधिक उत्साह व्यक्त किया जा रहा है, किंतु यह इस तथ्य की उपेक्षा करता है कि भारत के केवल लगभग 50 प्रतिशत परिवारों के पास इंटरनेट की सुविधा उपलब्ध है, और ग्रामीण भारत में यह आँकड़ा केवल 37 प्रतिशत है।
- So, it is evident that **education** is not a priority and whatever resources the **Uttar Pradesh government** has are directed towards promoting greater **religiosity**, a fact that portends the future of the **cow belt**.
अतः यह स्पष्ट है कि शिक्षा प्राथमिकता नहीं है और उत्तर प्रदेश सरकार के पास उपलब्ध संसाधन मुख्यतः अधिक धार्मिकता को बढ़ावा देने की दिशा में लगाए जा रहे हैं, जो काउ बेल्ट के भविष्य का संकेत देता है।
- This is the preparatory ground for the emergence of a significant politician from the **cow belt**, a national leader who would lead post the present **Prime Minister**, someone like **Yogi Adityanath** who has shown great fidelity to the principles of **Hindutva**.

यह काउ बेल्ट से एक महत्वपूर्ण राजनेता के उभरने की पृष्ठभूमि तैयार करता है, ऐसा राष्ट्रीय नेता जो वर्तमान प्रधानमंत्री के बाद नेतृत्व कर सकता है, जैसे योगी आदित्यनाथ, जिन्होंने हिंदुत्व के सिद्धांतों के प्रति गहरी निष्ठा प्रदर्शित की है।

- With the emergence of the **cow belt** as the **cynosure** for the new **nationalism**, and with the prospect of **delimitation** looming, one discerns a new and unsettling diffidence amongst **public intellectuals** as well as politicians from the **South**, on the inviolability of the formula of **'One Man, One Vote'**, the signature tune of **majoritarianism**.

काउ बेल्ट के नए राष्ट्रवाद के केंद्रबिंदु के रूप में उभरने तथा परिसीमन की संभावना के निकट आने के साथ, सार्वजनिक बुद्धिजीवियों तथा दक्षिण भारत के राजनेताओं के बीच 'एक व्यक्ति, एक मत' के सिद्धांत, जो बहुसंख्यकतावाद का प्रमुख आधार माना जाता है, की अक्षुण्णता को लेकर एक नई और चिंताजनक झिझक दिखाई देती है।

- Clever contrivances suggested by him, such as the **'Cambridge Compromise'**, look suspiciously like the concerns **Ivor Jennings**, the **constitutional lawyer**, had alluded to in the **1950s**, that in a **post-colonial society**, **'a narrow franchise, indirect elections, tribal representations may all be [seen as] quite sensible'**.

उनके द्वारा सुझाए गए चतुर उपाय, जैसे 'कैम्ब्रिज समझौता (Cambridge Compromise)', काफी हद तक उन चिंताओं से मिलते-जुलते प्रतीत होते हैं जिनका उल्लेख संवैधानिक विधिवेत्ता आइवर जेनिंग्स ने 1950 के दशक में किया था कि उत्तर-औपनिवेशिक समाज में 'सीमित मताधिकार, अप्रत्यक्ष चुनाव तथा जनजातीय प्रतिनिधित्व को भी पूरी तरह उचित माना जा सकता है।'

GS Paper 1: Geography		31 July 2026
TOPICS COVERED		
31J7	Mahanadi water dispute may end soon: Odisha CM महानदी जल विवाद जल्द समाप्त हो सकता है: ओडिशा के मुख्यमंत्री	
31J7	How common are cloudbursts in India? भारत में क्लाउडबर्स्ट (बादल फटना) की घटनाएँ कितनी सामान्य हैं?	



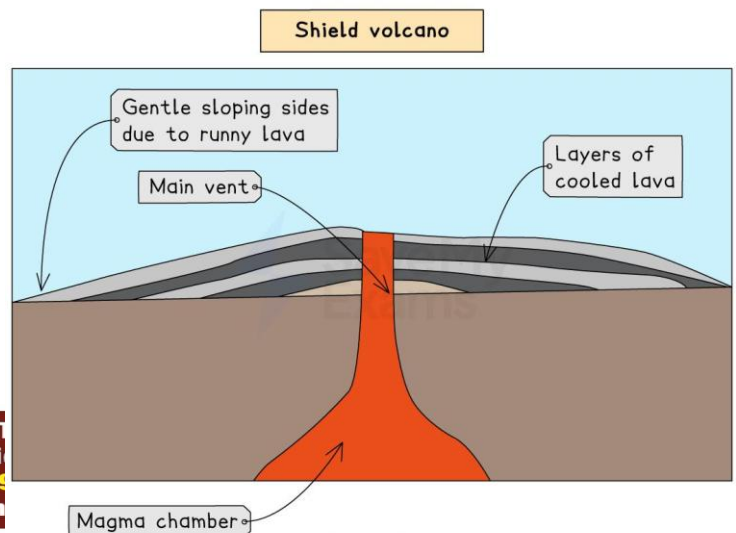
Live action: Mount Etna, in its latest act on Thursday, spews a massive plume of gases from one of its craters on the island of Sicily, Italy. Europe's tallest active stratovolcano, it is also a UNESCO World Heritage site known for its frequent eruptions. [AP](#)

Live action: **Mount Etna**, in its latest act on Thursday, spews a massive plume of gases from one of its craters on the **island of Sicily, Italy**.

Europe's tallest active stratovolcano, it is also a UNESCO World Heritage site known for its frequent eruptions.

Volcanoes

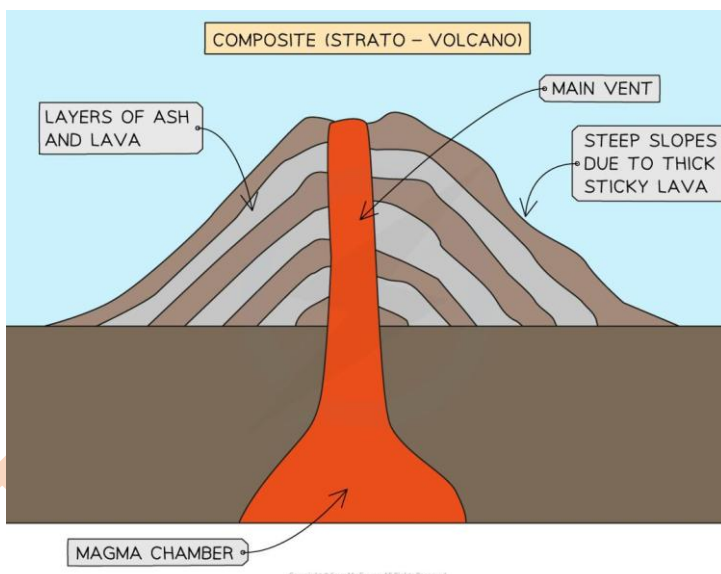
Shield Volcano



- Broad, gently sloping volcano formed by repeated eruptions of **low-viscosity basaltic lava**.
- Lava flows over long distances before solidifying.
- Eruptions are generally **quiet (effusive)**.
- **Example:** Mauna Loa (Hawaii, USA).

Composite Volcano (Stratovolcano)

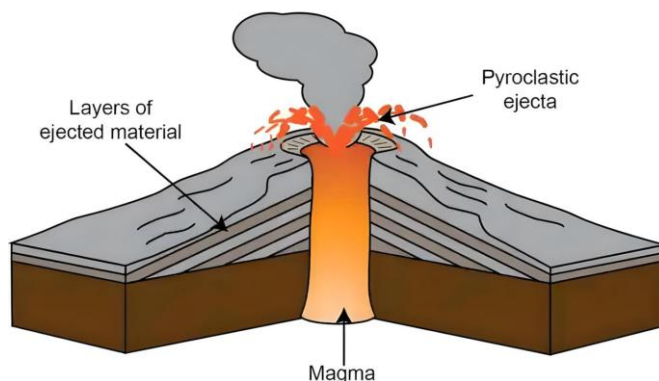
- Tall, cone-shaped volcano built from **alternating layers of lava, volcanic ash, and pyroclastic materials**.
- Characterised by **explosive as well as effusive eruptions**.
- Most dangerous type of volcano.
- **Examples:** Mount Fuji (Japan), Mount Vesuvius (Italy), Mount St. Helens (USA).



Cinder Cone Volcano

- Small, steep-sided volcano formed by the accumulation of **cinders, volcanic ash, and rock fragments** around a volcanic vent.
- Usually has a single crater.
- **Example:** Parícutin (Mexico).

Cinder Cone



Lava Dome (Plug Dome)

- Formed by **highly viscous lava** that cannot flow far from the vent.
- Produces steep, rounded domes.
- Often develops inside the crater of a larger volcano.
- **Example:** Lassen Peak (USA).

Caldera Volcano

- A large volcanic depression formed when a magma chamber empties and the summit collapses.
- May later contain lakes or new volcanic cones.
- **Examples:** Crater Lake (USA), Toba Caldera (Indonesia), Yellowstone Caldera (USA).

Top 5 Tallest Volcanoes in the World (Above Sea Level)

Rank	Volcano	Height (m)	Location	Type
1	Ojos del Salado	6,879 m	Chile–Argentina (Andes)	Stratovolcano (Complex)



Rank	Volcano	Height (m)	Location	Type
2	Llullaillaco	6,739 m	Chile–Argentina	Stratovolcano
3	Tipas	6,658 m	Argentina	Complex Stratovolcano
4	Nevado de Incahuasi	6,638 m	Chile–Argentina	Stratovolcano
5	Coropuna	6,377 m	Peru	Stratovolcano

- **Ojos del Salado** is the **highest volcano on Earth above sea level** and lies on the **Chile–Argentina border**. It is also regarded as the **highest active volcano** in the world, although its recent activity has been limited to fumarolic activity.
- **Llullaillaco** is the **second-highest active volcano** and is famous for its exceptionally well-preserved **Inca archaeological site** near the summit.
- These tallest volcanoes are located in the **Andes Mountains**, part of the **Pacific Ring of Fire** and associated with the **subduction of the Nazca Plate beneath the South American Plate**.

Do **not** confuse:

- Highest volcano above sea level: **Ojos del Salado (6,879 m)**.
- Tallest volcano from base to summit (including the underwater portion): **Mauna Kea, Hawaii (over 10,000 m from the Pacific Ocean floor to its summit)**.



How common are cloudbursts in India?

What counts as a cloudburst under the IMD's definition? How do they form over mountainous regions? Why are they so difficult to forecast? Can the term obscure the role of poor planning, inadequate infrastructure? What is India doing to improve forecasting and early warnings?

SS I: Geography
SS III: Disaster
Management

Vasudevan Mukunth

The story so far:

When a wall of water suddenly crashes from the sky and sweeps away homes and roads within minutes, one of the first words officials and the media in India reach for is 'cloudburst'. However, the term is often misused in a way that can distract from poor planning and crumbling infrastructure.

What counts as a cloudburst?

According to the India Meteorological Department (IMD), a cloudburst occurs when a small area, around 20-30 sq. km, receives 10 cm or more of rain in an hour.

To put this in perspective, Indore receives 1,062 mm of rain every year on average. A cloudburst could dump nearly 10% of this in 60 minutes.

Heavy rains are a common feature of the southwest monsoon, but a cloudburst is still an extraordinary amount of rainfall and much rarer. Because the water falls so quickly over a relatively small area, the ground cannot absorb all of it, leading to rapid and voluminous flooding.

Some scientists have also advocated for a category called 'mini-cloudburst', for 5 cm of rain in an hour over the same area, as, depending on the local topography, this can be devastating as well.

How common are cloudbursts in India?

Although cloudbursts are relatively rare, global warming, in particular as the atmosphere warms and can hold more moisture, is making them more frequent.

In response to a question, former Union Earth Sciences Minister Harsh Vardhan told Parliament in 2019 that between 1970 and 2016, the IMD had recorded only around 30 such incidents. However, many experts believe this number is an underestimate.

Counting them is not straightforward



Debris lies scattered after a cloudburst triggered flash floods, at Pahalgam in Anantnag, on July 12, 2019.

because most cloudbursts occur in remote, high-altitude regions, where rain gauges and weather stations are sparse.

In fact, if a cloudburst occurs a few kilometres from a monitoring station, it may not be officially recorded as a cloudburst even if it causes large-scale destruction downstream.

Uttarakhand, Himachal Pradesh, and Jammu and Kashmir have, of late, reported a surge in events that locals have described as cloudbursts, especially in July and August.

How does a cloudburst form?

A cloudburst typically begins with convection, when warm, moist air rises rapidly into the atmosphere. In mountainous areas, this is called orographic lifting, where monsoon winds are forced upwards by steep slopes.

As the air rises, it cools and condenses into towering cumulonimbus clouds, which can be up to 15 km tall.

Water droplets begin to form inside these clouds and, as they get heavier, they would normally fall as rain. However, if the currents of warm air moving upwards are very strong, they can keep raindrops suspended in the air for longer.

Eventually, the weight of the water droplets becomes too great for gravity and the updrafts to hold, or the updrafts

weaken, sending the water plummeting down like an ocean descending on the ground.

Can the label obscure accountability?

By calling a heavy downpour a 'cloudburst', authorities can turn it into a singular and unforeseeable act of nature, obscuring the role of human negligence.

That is, if the cause of a tragedy is said to be a 'cloudburst', the blame can be written off, which is harder to do when the real cause is "heavy rain combined with poor drainage".

In 2025, during the Dharali floods in Uttarakhand, initial reports blamed a cloudburst. However, meteorological data later showed that the actual rate of rainfall was much lower than the threshold for a cloudburst.

The underlying causes were illegal construction on riverbeds, deforestation that had left soil vulnerable to erosion, and the absence of drainage infrastructure along new "all weather" roads.

Had the downpour indeed been a cloudburst, officials may have been able to avoid questions about why the State had allowed buildings to be constructed in high-risk zones and why early warning systems failed.

Last week, the IMD rejected reports

that Assam and Nagaland had experienced cloudbursts over the preceding few days and that they were responsible for the Upper Assam floods.

Are cloudbursts hard to forecast?

Cloudbursts are very difficult to forecast. Meteorologists can usually say whether a region is at risk of heavy rain but cannot say precisely which patch of land will experience a cloudburst.

First, most weather models study the atmosphere in grids and estimate the average weather for each cell.

A cloudburst, on the other hand, occurs over an area smaller than the size of each grid cell. To detect one, scientists need very high-resolution models, which in turn require immense computing power that is not always readily available.

Because of the mechanism through which cloudbursts form, they also develop and occur quickly. Cyclones and monsoon systems, on the other hand, can be tracked for weeks or even months, giving scientists more data to work with.

Finally, mountains are challenging environments for weather monitoring, and cloudbursts have a greater propensity to occur there. For instance, Doppler weather radars work by emitting and receiving radar beams, which mountains can block, creating blind spots over many areas where cloudbursts are also more common.

Because the terrain is so rugged, there are also fewer automatic weather stations. If there are no sensors on the ground to tell a computer what is happening at a given moment, it cannot reliably predict what could happen in the next hour.

That said, the IMD is currently working on 'nowcasting', a technology that issues short-term alerts every few hours.

Under the government's new 'Mission Mausam', India also plans to more than double its radar network, from the current 40 or so, and use AI to better predict hyperlocal events.

That said, even with the best technology, a cloudburst is likely to remain more difficult to predict than a typical rainstorm.

THE GIST

▼ A cloudburst is a highly localised weather event in which at least 10 cm of rain falls over 20-30 sq. km in an hour, making it difficult to forecast despite advances in nowcasting and radar coverage.

▼ The term is often incorrectly used for heavy rainfall events, even though many disasters are exacerbated by poor drainage, deforestation, construction in high-risk zones and other human factors.

31J7. How common are cloudbursts in India?

भारत में क्लाउडबर्स्ट (बादल फटना) की घटनाएँ कितनी सामान्य हैं?

- When a wall of water suddenly crashes from the sky and sweeps away homes and roads within minutes, one of the first words officials and the media in India reach for is 'cloudburst'. जब आकाश से अचानक जलराशि का प्रचंड प्रवाह गिरता है और कुछ ही मिनटों में घरों तथा सड़कों को बहा ले जाता है, तब भारत में अधिकारी और मीडिया प्रायः सबसे पहले 'क्लाउडबर्स्ट (बादल फटना)' शब्द का प्रयोग करते हैं।

What counts as a cloudburst?

किसे क्लाउडबर्स्ट (बादल फटना) माना जाता है?

- According to the India Meteorological Department (IMD), a cloudburst occurs when a small area, around 20-30 sq. km, receives 10 cm or more of rain in an hour.

भारत मौसम विज्ञान विभाग (IMD) के अनुसार, क्लाउडबर्स्ट तब होता है जब लगभग 20-30 वर्ग किलोमीटर के छोटे क्षेत्र में एक घंटे के भीतर 10 सेंटीमीटर या उससे अधिक वर्षा हो जाती है।

- To put this in perspective, Indore receives 1,062 mm of rain every year on average. तुलना के लिए, इंदौर में प्रतिवर्ष औसतन 1,062 मिमी वर्षा होती है।
- A cloudburst could dump nearly 10% of this in 60 minutes. एक क्लाउडबर्स्ट केवल 60 मिनट में ही इस वार्षिक वर्षा का लगभग 10% बरसा सकता है।
- Some scientists have also advocated for a category called 'mini-cloudburst', for 5 cm of rain in an hour over the same area, as, depending on the local topography, this can be

devastating as well.

कुछ वैज्ञानिकों ने 'मिनी-क्लाउडबर्स्ट' नामक एक श्रेणी का भी प्रस्ताव दिया है, जिसमें समान क्षेत्र में एक घंटे में 5 सेंटीमीटर वर्षा होती है, क्योंकि स्थानीय स्थलाकृति के आधार पर यह भी अत्यंत विनाशकारी सिद्ध हो सकती है।

How common are cloudbursts in India?

भारत में क्लाउडबर्स्ट की घटनाएँ कितनी सामान्य हैं?

- Although **cloudbursts** are relatively rare, **global warming**, in particular as the atmosphere warms and can hold more moisture, is making them more frequent.
यद्यपि क्लाउडबर्स्ट अपेक्षाकृत दुर्लभ हैं, फिर भी वैश्विक ऊष्मीकरण, विशेष रूप से वायुमंडल के अधिक गर्म होकर अधिक नमी धारण करने की क्षमता प्राप्त करने के कारण, इनकी आवृत्ति बढ़ रही है।
- In response to a question, former **Union Earth Sciences Minister Harsh Vardhan** told Parliament in **2019** that between **1970** and **2016**, the **IMD** had recorded only around **30** such incidents.
एक प्रश्न के उत्तर में पूर्व केंद्रीय पृथ्वी विज्ञान मंत्री डॉ. हर्षवर्धन ने 2019 में संसद को बताया था कि 1970 से 2016 के बीच IMD ने ऐसी केवल लगभग 30 घटनाएँ दर्ज की थीं।
- However, many experts believe this number is an underestimate.
किन्तु अनेक विशेषज्ञों का मानना है कि यह संख्या वास्तविक घटनाओं से कम है।
- Counting them is not straightforward because most **cloudbursts** occur in remote, **high-altitude regions**, where **rain gauges** and **weather stations** are sparse.
इनकी गणना करना सरल नहीं है, क्योंकि अधिकांश क्लाउडबर्स्ट दूरस्थ उच्च पर्वतीय क्षेत्रों में होते हैं, जहाँ वर्षामापी यंत्र और मौसम केंद्र बहुत कम हैं।

How does a cloudburst form?

क्लाउडबर्स्ट कैसे बनता है?

- A **cloudburst** typically begins with **convection**, when warm, moist air rises rapidly into the atmosphere.
क्लाउडबर्स्ट सामान्यतः संवहन (Convection) से प्रारम्भ होता है, जब गर्म और आर्द्र वायु तीव्र गति से ऊपर उठती है।
- In mountainous areas, this is called **orographic lifting**, where **monsoon winds** are forced upwards by steep slopes.
पर्वतीय क्षेत्रों में इस प्रक्रिया को ओरोग्राफिक लिफ्टिंग (Orographic Lifting) कहा जाता है, जिसमें मानसूनी पवनें तीव्र ढलानों के कारण ऊपर उठने के लिए बाध्य होती हैं।
- As the air rises, it cools and condenses into towering **cumulonimbus clouds**, which can be up to **15 km** tall.
जैसे-जैसे वायु ऊपर उठती है, वह ठंडी होकर संघनित होती है और विशाल क्यूम्यूलोनिम्बस बादलों का निर्माण करती है, जिनकी ऊँचाई 15 किलोमीटर तक हो सकती है।
- Water droplets** begin to form inside these clouds and, as they get heavier, they would normally fall as rain.
इन बादलों के भीतर जल की बूंदें बनने लगती हैं और सामान्यतः भारी होने पर वे वर्षा के रूप में नीचे गिरती हैं।
- However, if the currents of warm air moving upwards are very strong, they can keep **raindrops** suspended in the air for longer.
किन्तु यदि ऊपर उठने वाली गर्म वायु की धाराएँ अत्यंत प्रबल हों, तो वे वर्षा की बूंदों को अधिक समय तक वायु में ही निलंबित रख सकती हैं।
- Eventually, the weight of the **water droplets** becomes too great for **gravity** and the **updrafts** to hold, or the updrafts weaken, sending the water plummeting down like an ocean

descending on the ground.

अंततः जल की बूंदों का भार इतना अधिक हो जाता है कि गुरुत्वाकर्षण और ऊर्ध्वगामी वायु धाराएँ (Updrafts) उन्हें रोक नहीं पातीं, अथवा ये धाराएँ कमजोर पड़ जाती हैं, जिसके परिणामस्वरूप जलराशि मानो समुद्र की भाँति एक साथ धरती पर गिर पड़ती है।

- **Cloudbursts** are very difficult to forecast.
क्लाउडबर्स्ट का पूर्वानुमान लगाना अत्यंत कठिन होता है।
- For instance, **Doppler weather radars** work by emitting and receiving radar beams, which mountains can block, creating **blind spots** over many areas where **cloudbursts** are also more common.
उदाहरण के लिए, डॉप्लर मौसम रडार रडार तरंगों के उत्सर्जन और ग्रहण के माध्यम से कार्य करते हैं, किंतु पर्वत इन तरंगों को अवरुद्ध कर देते हैं, जिससे ऐसे क्षेत्रों में **ब्लाइंड स्पॉट** बन जाते हैं जहाँ **क्लाउडबर्स्ट** की घटनाएँ अधिक होती हैं।
- That said, the **IMD** is currently working on '**nowcasting**', a technology that issues short-term alerts every few hours.
फिर भी, भारतीय मौसम विज्ञान विभाग (IMD) वर्तमान में 'नाउकास्टिंग' तकनीक पर कार्य कर रहा है, जो प्रत्येक कुछ घंटों में अल्पकालिक चेतावनियाँ जारी करती है।
- Under the government's new '**Mission Mausam**', India also plans to more than double its **radar network**, from the current 40 or so, and use **AI** to better predict **hyperlocal events**.
सरकार के नए 'मिशन मौसम' के अंतर्गत भारत अपनी वर्तमान लगभग 40 रडारों की संख्या को दोगुने से अधिक करने तथा कृत्रिम बुद्धिमत्ता (AI) का उपयोग करके अत्यंत स्थानीय मौसमीय घटनाओं का बेहतर पूर्वानुमान लगाने की योजना बना रहा है।

GS Paper II: Polity		31 July 2026
TOPICS COVERED		
31J7	States must set up prison oversight boards: SC राज्यों को जेल निगरानी बोर्ड गठित करने होंगे: सर्वोच्च न्यायालय	
31J7	Have fast-track courts delivered on the promise of speedy justice? क्या फास्ट-ट्रैक न्यायालयों ने त्वरित न्याय के अपने वादे को पूरा किया है?	
31J7	Why did the Cauvery panel order Karnataka to release water? कावेरी प्राधिकरण ने कर्नाटक को जल छोड़ने का निर्देश क्यों दिया?	

States must set up prison oversight boards: SC

GS II: Polity
Aaratrika Bhaumik
NEW DELHI

The Supreme Court on Thursday directed all States and Union Territories to constitute a board of visitors for prisons in every district, as required under the Model Prison Manual, 2016, within four weeks. The oversight body, comprising official and non-official members, conducts regular inspections of prisons, monitors the welfare of inmates and reviews living conditions.

A Bench headed by Justice J.B. Pardiwala passed the direction while hearing a *suo motu* case initiated to address discrimination inside prisons following the apex court's judgment in October last year directing the removal of provisions and practices in prison manuals that perpetuated caste discrimination.

Senior advocate S. Muralidhar, who is assisting the court as *amicus curiae*, pointed out that despite the mandate under the manual, none of the States had constituted district-wise boards of visitors. He submitted that these bodies were essential for ensuring accountability and effective monitoring of prison administration.

31J7. States must set up prison oversight boards: SC राज्यों को जेल निगरानी बोर्ड गठित करने होंगे: सर्वोच्च न्यायालय

• The Supreme Court on Thursday directed all States and Union Territories to constitute a Board of Visitors for prisons in every district, as required under the Model Prison Manual, 2016, within four weeks.

सर्वोच्च न्यायालय ने गुरुवार को सभी राज्यों और केंद्र शासित प्रदेशों को मॉडल प्रिजन मैनुअल, 2016 के प्रावधानों के अनुसार चार सप्ताह के भीतर प्रत्येक जिले की जेल के लिए बोर्ड ऑफ विजिटर्स (जेल निरीक्षण बोर्ड) गठित करने का निर्देश दिया।

• The oversight body, comprising official and non-official members, conducts regular inspections of prisons, monitors the welfare of inmates, and reviews living conditions.

यह निगरानी निकाय, जिसमें सरकारी और गैर-सरकारी सदस्य शामिल होते हैं, जेलों का नियमित निरीक्षण करता है, कैदियों के कल्याण की निगरानी करता है तथा उनकी रहने की परिस्थितियों की समीक्षा करता है।

• A Bench headed by Justice J.B. Pardiwala passed the direction while hearing a *suo motu* case initiated to address discrimination inside prisons following the apex court's judgment in October last year directing the removal of provisions and practices in prison manuals that perpetuated caste discrimination. न्यायमूर्ति जे.बी. पारदीवाला की अध्यक्षता वाली पीठ ने यह निर्देश उस स्वप्रेरित (सुओ मोटू) मामले की सुनवाई के दौरान दिया, जिसे पिछले वर्ष अक्टूबर में सर्वोच्च न्यायालय द्वारा जेल नियमावलिओं में जातिगत भेदभाव को बढ़ावा देने वाले प्रावधानों और प्रथाओं को हटाने के निर्णय के बाद जेलों के भीतर भेदभाव की समस्या के समाधान हेतु प्रारम्भ किया गया था।

Have fast-track courts delivered on the promise of speedy justice?



Bharat Chugh
Delhi-based advocate and former civil judge



Shruthi Naik
Senior resident fellow at Vidhi Centre for Legal Policy, Delhi

PARLEY
Prime Minister Narendra Modi's announcement to set up fast-track courts to hear paper leak cases has once again revived the debate over whether these specialised courts are the silver bullet to India's chronic judicial delays. Following the announcement, the Delhi High Court has constituted a fast-track court at the Rouse Avenue Courts Complex to exclusively hear cases under the Public Examinations (Prevention of Unfair Means) Act, 2004. However, stakeholders have cautioned that fast-track courts also struggle with mounting pendency and resource constraints. So, have fast-track courts delivered on the promise of speedy justice? Bharat Chugh and Shruthi Naik discuss the question in a conversation moderated by Aaratrika Bhaumik.

How effective have fast-track courts been?

Bharat Chugh: Fast-track courts have succeeded in delivering speed, but only for the limited category of cases assigned to them. That is because, in most instances, a fast-track court does not entail the creation of additional judges or judicial capacity. For example, take the proposed fast-track courts for exam leak cases. The judges presiding over these courts are typically drawn from the existing judicial system and reassigned from the cases they were already handling to hear these priority matters instead. Rather than expand the judiciary's capacity, fast-track courts redeploy existing judicial resources. As a result, while the designated cases move through the system more quickly, the matters those judges were previously handling are pushed further down the queue.

Shruthi Naik: The larger problem is that we rarely consider, at a structural level, what establishing a fast-track court actually requires. While funds may be allocated for judicial officers, support staff, and operational expenses, the real constraint is judicial capacity. If all we are doing is reallocating existing judges rather than expanding the system, we are simply shifting the backlog elsewhere. Equally important is whether the procedural reforms needed to support these courts are in place. Are witness depositions taking place in a timely and predictable manner? Are all stakeholders coordinating to ensure cases progress without unnecessary adjournments? Without these systemic changes, it is difficult to assess whether fast-track courts are truly delivering on their promise of speedy justice.

The Union Law Ministry recently said that



Prayer for justice: A child lights a candle after a march on the NEET paper leak issue in Shimla on July 25, 2021.

Fast-Track Special Courts (FTSCs) are burdened with a backlog of nearly 2.45 lakh cases. What explains this pendency?

SN: The Law Ministry's data indicates the number of cases instituted, disposed of, and pending over the past three years. A closer look at those figures shows that the case clearance rate (the number of cases disposed of compared with the number of cases instituted) has remained below 100% each year. In other words, the system has consistently failed to keep pace with the volume of new cases being filed. In 2020, around 1.4 lakh cases were instituted, but only about 66,000 were disposed of. The remainder inevitably added to the backlog.

More importantly, if we want to assess whether fast-track courts are truly delivering speedy justice, we need robust data on the time taken to dispose of cases. While the National Judicial Data Grid provides pendency and disposal timelines for courts generally, it does not offer comparable data for FTSCs. Without that degree of transparency, it is difficult to evaluate whether these courts are fulfilling the objective for which they were established.

BC: The pendency in fast-track courts cannot be viewed in isolation. It has to be seen in the context of the overall burden on the justice system. Trial courts across the country are currently grappling with nearly 4.8 crore pending cases, of which roughly 74% are criminal matters. That is an enormous caseload, particularly when viewed alongside the limited judicial strength available to handle it. Every year, scores of fresh cases are instituted, spanning offences from acid attacks and chain-smatching to cybercrime and murder. That is the scale of the challenge confronting the justice system. Without addressing these systemic constraints, it is difficult to expect fast-track courts alone to bring about lasting improvements in the delivery of speedy justice.



Ideally, we should be striving for a justice system that does not require fast-track courts at all. The very demand for specialised courts suggests that people have lost confidence in the ability of the regular justice system to deliver timely justice.

SHRUTHI NAIK

The Public Examinations (Prevention of Unfair Means) Amendment Bill, 2026, requires investigations into paper leak cases to be completed within two months and sets a three-month timeline for trials. Should laws prescribe such rigid timelines?

BC: The Supreme Court has repeatedly cautioned against prescribing rigid timelines for criminal proceedings because every case presents its own complexities. Criminal trials often involve chargesheets and evidence running into thousands of pages. Forcing proceedings into a rigid timeline may deprive the defence of a meaningful opportunity to prepare its case, thereby compromising the right to a fair trial. It can also leave courts with less flexibility to effectively manage witnesses, whose testimony is often crucial to the outcome of a case. Therefore, the objective should be to strike a careful balance between expeditious justice and procedural fairness, without sacrificing one in pursuit of the other.

SN: Before prescribing strict timelines, we need to ask whether the necessary institutional capacity actually exists. Do we have enough investigators, forensic laboratories, and judicial resources to complete investigations within the prescribed time? Can forensic reports be generated quickly enough? Can witnesses always be traced and examined without delay? While everyone wants cases to be concluded expeditiously, that objective cannot come at the cost of the quality of justice being delivered. Setting aspirational timelines to encourage the expeditious disposal of cases is one thing, but making them mandatory is quite another.

The Supreme Court has cautioned that arbitrarily designating cases for fast-track courts may violate the right to equality under Article 14 of the Constitution. What considerations should guide the selection of cases for fast-track courts?

SN: Ideally, we should be striving for a justice system that does not require fast-track courts at all. The very demand for specialised courts

suggests that people have lost confidence in the ability of the regular justice system to deliver timely justice. More often than not, the decision to assign certain categories of cases to fast-track courts is driven by public sentiment. If individuals are entitled to equal protection of the law, they should also have an equal opportunity to access justice. These are difficult policy choices, and any decision to assign cases to fast-track courts must rest on a rational basis consistent with the guarantee of equality.

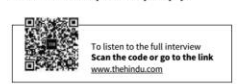
In 2019, FTSCs were constituted to ensure the time-bound trial of rape cases and offences under the Protection of Children from Sexual Offences Act. Have these courts lived up to the purpose?

BC: A major challenge facing FTSCs is the acute shortage of resources. Strengthening the prosecution has never received the attention it deserves. Even in Delhi, it is not uncommon for a single public prosecutor to appear before multiple courts in a day, simply because there are not enough prosecutors. This is particularly concerning in complex criminal cases, where prosecutors often face teams of defence lawyers with far greater legal and research support. The same resource deficit is evident in forensic infrastructure. Paper leak cases, for instance, often hinge on digital evidence recovered from electronic devices, making cyber forensics critical. Yet forensic laboratories are severely understaffed and overburdened. Unless we strengthen the prosecution, expand forensic capacity, and fill judicial vacancies, FTSCs alone cannot deliver speedy justice.

What institutional reforms are required?

BC: A fast-track court is only as effective as the investigation that precedes it. If the objective is to deliver timely and well-reasoned judgments, the process must begin with a credible investigation. That requires adequately trained investigators, timely forensic assistance and the support necessary to gather reliable evidence.

SN: Lawyers, witnesses, investigators and prosecutors should know well in advance when they are required to appear so that hearings can proceed without disruption. Equally important is reducing avoidable delays. That means minimising adjournments and ensuring court directions are complied with promptly.



To listen to the full interview
Scan the code or go to the link
www.thehindu.com

31J7. Have fast-track courts delivered on the promise of speedy justice?

क्या फास्ट-ट्रैक न्यायालयों ने त्वरित न्याय के अपने वादे को पूरा किया है?

- Following the announcement, the **Delhi High Court** has constituted a **fast-track court** at the **Rouse Avenue Courts Complex** to exclusively hear cases under the **Public Examinations (Prevention of Unfair Means) Act, 2024**.

इस घोषणा के बाद दिल्ली उच्च न्यायालय ने राउज एवेन्यू न्यायालय परिसर में फास्ट-ट्रैक न्यायालय का गठन किया है, जो केवल लोक परीक्षाएँ (अनुचित साधनों की रोकथाम) अधिनियम, 2024 के अंतर्गत आने वाले मामलों की सुनवाई करेगा।

- While funds may be allocated for **judicial officers, support staff**, and operational expenses, the real constraint is **judicial capacity**.

यद्यपि न्यायिक अधिकारियों, सहायक कर्मचारियों तथा संचालन व्यय के लिए धन आवंटित किया जा सकता है, किन्तु वास्तविक बाधा न्यायिक क्षमता की कमी है।

- Equally important is whether the **procedural reforms** needed to support these courts are in place.

यह भी उतना ही महत्वपूर्ण है कि इन न्यायालयों को प्रभावी बनाने के लिए आवश्यक प्रक्रियात्मक सुधार लागू किए गए हैं या नहीं।

- Are all stakeholders coordinating to ensure cases progress without unnecessary adjournments?

क्या सभी संबंधित पक्ष यह सुनिश्चित करने के लिए समन्वय कर रहे हैं कि मामलों की प्रगति अनावश्यक adjournments के बिना हो सके?

- The Union Law Ministry recently said that **Fast-Track Special Courts (FTSCs) are burdened with a backlog of nearly 2.45 lakh cases. What explains this pendency?**

हाल ही में केंद्रीय विधि मंत्रालय ने कहा कि फास्ट-ट्रैक विशेष न्यायालय (FTSCs) लगभग 2.45 लाख लंबित मामलों के बोझ से दबे हुए हैं। इस लंबित स्थिति का कारण क्या है?

- While the **National Judicial Data Grid** provides pendency and disposal timelines for courts generally, it does not offer comparable data for **FTSCs**.

यद्यपि नेशनल ज्यूडिशियल ग्रेड सामान्य न्यायालयों के लिए लंबित मामलों और निस्तारण की समय-सीमा संबंधी जानकारी उपलब्ध कराता है, किन्तु FTSCs के लिए तुलनीय आँकड़े उपलब्ध नहीं कराता।

- Trial courts** across the country are currently grappling with nearly **4.8 crore pending cases**, of which roughly **74% are criminal matters**.

देशभर की निचली अदालतें वर्तमान में लगभग 4.8 करोड़ लंबित मामलों से जूझ रही हैं, जिनमें लगभग 74% मामले आपराधिक प्रकृति के हैं।

- Do we have enough **investigators, forensic laboratories**, and **judicial resources** to complete investigations within the prescribed time?

क्या हमारे पास निर्धारित समय में जाँच पूरी करने के लिए पर्याप्त अन्वेषक, फॉरेंसिक प्रयोगशालाएँ तथा न्यायिक संसाधन उपलब्ध हैं?

The Supreme Court has cautioned that **arbitrarily designating cases for fast-track courts may violate the right to equality under Article 14 of the Constitution**.



उच्चतम न्यायालय ने चेतावनी दी है कि मनमाने ढंग से मामलों को फास्ट-ट्रैक न्यायालयों को सौंपना संविधान के अनुच्छेद 14 के अंतर्गत प्रदत्त समानता के अधिकार का उल्लंघन कर सकता है।

- Even in **Delhi**, it is **not uncommon for a single public prosecutor to appear before multiple courts in a day**, simply because there are not enough prosecutors.
यहाँ तक कि दिल्ली में भी एक ही लोक अभियोजक का एक दिन में अनेक न्यायालयों में उपस्थित होना असामान्य नहीं है, क्योंकि पर्याप्त अभियोजक उपलब्ध नहीं हैं।
- **Paper leak cases**, for instance, often hinge on **digital evidence** recovered from electronic devices, making **cyber forensics** critical.
उदाहरण के लिए, **प्रश्नपत्र लीक मामलों** में प्रायः इलेक्ट्रॉनिक उपकरणों से प्राप्त **डिजिटल साक्ष्यों** पर निर्भरता होती है, जिससे **साइबर फॉरेंसिक** अत्यंत महत्वपूर्ण हो जाता है।
- **Yet forensic laboratories are severely understaffed and overburdened.**
फिर भी **फॉरेंसिक प्रयोगशालाएँ** गंभीर रूप से जनशक्ति की कमी और अत्यधिक कार्यभार से जूझ रही हैं।
- **SN: Lawyers, witnesses, investigators and prosecutors should know well in advance when they are required to appear so that hearings can proceed without disruption.**
एसएन: अधिवक्ताओं, गवाहों, अन्वेषकों तथा अभियोजकों को पहले से यह जानकारी होनी चाहिए कि उन्हें कब उपस्थित होना है, ताकि सुनवाई बिना किसी व्यवधान के आगे बढ़ सके।

Why did Cauvery panel order Karnataka to release water?

What factors did the committee consider before fixing the quantum of release?

SS II: Polity
T. Ramakrishnan

The story so far:

The Cauvery Water Management Authority (CWMA), at its meeting on Thursday in New Delhi, endorsed the Cauvery Water Regulation Committee's (CWRC) order, issued on July 28, that Karnataka release 3,500 cubic feet per second (cusecs) to Tamil Nadu for 15 days, starting from July 29. If the quantity of 3,500 cusecs is available throughout the day for 15 days, the quantum of water is about 4.5 thousand million cubic feet (tmc ft).

What is the brief for the CWRC in tackling the Cauvery dispute?
The CWRC functions within the ambit of the Cauvery Water Management Authority (CWMA), which constitutes the implementation mechanism for the final award (2007) of the Cauvery Water

Disputes Tribunal as modified by the Supreme Court in 2018. The committee is headed by the Member (Water Resources) of the CWMA, Vineet Gupta, and has as its members the Chief Engineers of all the basin constituents and a representative each of the India Meteorological Department, Central Water Commission, and Union Ministry of Agriculture and Farmers' Welfare.

According to a notification issued by the Union Jal Shakti Ministry in June 2018, the committee monitors daily water levels, inflows and storage at each of the reservoirs – Hemavathy, Harangi, Krishnarajasagara (KRS) and Kabini (all in Karnataka), Mettur, Bhavanisagar and Amaravathy (Tamil Nadu), and Banasuragar in Kerala. It is to ensure 10 daily releases of water on a monthly basis from the reservoirs as directed by the authority. It is also to prepare seasonal – southwest monsoon (June-October 15);

northeast monsoon (October 16-January 31) and hot weather (February-May) – and annual reports of the water account.

During either of the monsoons, the CWRC ordinarily holds meetings once every 15 days in a hybrid mode. As there has been scanty rainfall in the Cauvery catchment this time and Tamil Nadu pressing its demand for the release of its share of water, the CWRC met on July 28 to review the situation. It will meet again on August 11.

How does the committee arrive at decisions in times of distress?
The hydro-meteorological conditions prevailing in the Cauvery basin, including the rainfall recorded and the forecast or outlook for the ensuing fortnight, live storage position, inflows into and outflows from the eight reservoirs, and the realisation of flows at Biligundulu are reviewed and deliberated upon in detail. Compliance with the decision and

directions issued during the previous meeting is also reviewed at the next meeting.

What else was considered by the CWRC?

The committee took into account net inflow to the four reservoirs in Karnataka during the current season and compared it with 30-year data. Mr. Gupta, in a conversation with *The Hindu* on Wednesday, said the shortfall suffered was to the extent of 60%. The CWRC considered the flow of river water at Biligundulu and in the intermediate catchment – between KRS-Kabini and Mettur, both of which presented a gloomy picture. At Biligundulu, the deficit was 90%.

Given that the Meteorological Department did not give an optimistic outlook for the subsequent weeks, the CWRC, according to its chief, had arrived at the decision that would make Karnataka comfortable to release the water. As on July 30, the combined storage of the four reservoirs in the upper riparian State was 65.34 tmc ft against a total capacity of 114.57 tmc ft.

What were the reactions?

As Karnataka has not commenced water supply for irrigation this time in view of deficient rainfall, it is naturally upset at the decision. At the meeting of the CWMA, it filed an appeal against the

CWRC's order, but this was rejected. Chief Minister D.K. Shivakumar, now in New Delhi, subsequently announced that an all-party meeting would be held in Bengaluru on August 2 to seek the advice of the parties on the next move.

In Tamil Nadu, where the authorities have not commenced the water release for irrigation in the Cauvery delta, there are no takers for the Committee's move. The quantum is viewed as insufficient. There is a view that the CWRC should have ordered Karnataka to release the entire deficit of 9.8 tmc ft, as worked out by it. According to an estimate, the State's water requirement for the ongoing and short-term *kuruvai* cultivation season is at least 30 tmc ft, given the current coverage of 3.5 lakh acres. But the storage in Mettur is around 36 tmc ft, of which 10 tmc ft has to be kept apart for drinking water needs and dead storage. However, Tamil Nadu would require much more water for the next *samba-thaladi* cultivation season, which facilitates livelihood opportunities to lakhs of agricultural labourers in the delta. It needs a minimum of 180 tmc ft.

What is the way forward?

The States, as Mr. Gupta also pointed out, have to evolve a distress-sharing formula. This issue can be covered in the proposed visit of Tamil Nadu Chief Minister C. Joseph Vijay to Bengaluru to persuade the Karnataka government to release his State's share of the Cauvery river water.

31J7. Why did the Cauvery panel order Karnataka to release water?

कावेरी प्राधिकरण ने कर्नाटक को जल छोड़ने का निर्देश क्यों दिया?

- The **Cauvery Water Management Authority (CWMA)**, functions within the ambit of the **Cauvery Water Management Authority (CWMA)**, which constitutes the implementation mechanism for the **final award (2007)** of the **Cauvery Water Disputes Tribunal**, as modified by the **Supreme Court in 2018**.
कावेरी जल विनियमन समिति (CWRC), कावेरी जल प्रबंधन प्राधिकरण (CWMA) के अधीन कार्य करती है, जो कावेरी जल विवाद न्यायाधिकरण के 2007 के अंतिम निर्णय के 2018 में सर्वोच्च न्यायालय द्वारा संशोधित स्वरूप के क्रियान्वयन का तंत्र है।
- The committee is headed by the **Member (Water Resources)** of the **CWMA**, **Vineet Gupta**, and has as its members the **Chief Engineers** of all the basin constituents and one representative each from the **India Meteorological Department (IMD)**, **Central Water**

Commission (CWC), and the Union Ministry of Agriculture and Farmers' Welfare.

इस समिति की अध्यक्षता CWMA के सदस्य (जल संसाधन) विनीत गुप्ता करते हैं। इसके सदस्यों में कावेरी बेसिन के सभी राज्यों के मुख्य अभियंता तथा भारत मौसम विज्ञान विभाग (IMD), केंद्रीय जल आयोग (CWC) और केंद्रीय कृषि एवं किसान कल्याण मंत्रालय के एक-एक प्रतिनिधि शामिल हैं।

- According to a notification issued by the Union Jal Shakti Ministry in June 2018, the committee monitors daily water levels, inflows, and storage at each of the reservoirs — **Hemavathy, Harangi, Krishnarajasagara (KRS) and Kabini (all in Karnataka), Mettur, Bhavanisagar and Amaravathy (Tamil Nadu), and Banasurasagar in Kerala.**

जून 2018 में केंद्रीय जल शक्ति मंत्रालय द्वारा जारी अधिसूचना के अनुसार, समिति हेमावती, हरंगी, कृष्णराजसागर (KRS) तथा कबिनी (सभी कर्नाटक में), मेट्टूर, भवानीसागर तथा अमरावती (तमिलनाडु में) और बाणासुरसागर (केरल में) जलाशयों के जल स्तर, अंतःप्रवाह तथा भंडारण की प्रतिदिन निगरानी करती है।

GS Paper II: Governance	31 July 2026
TOPICS COVERED	
31J7	Activists raise alarm over PM CARES denial of access to audit statements पीएम केयर्स के ऑडिट विवरण सार्वजनिक न होने पर कार्यकर्ताओं ने जताई चिंता

Activists raise alarm over PM CARES denial of access to audit statements

GS II: Governance

Bindu Shajan Perappadan
NEW DELHI

The Prime Minister's Citizen Assistance and Relief in Emergency Situations (PM CARES) Fund has not made public any audited financial statements for the past three financial years even as activists raise concerns about its transparency. The Fund, a public charitable Trust established in March 2020 amid the COVID-19 crisis to support relief efforts during public health emergencies and other disasters, is chaired by the Prime Minister and funded entirely through voluntary contributions, according to information released by the Union government.

The last publicly available audited financial statements, for the financial year 2022-23, show an opening balance of ₹5,415.65 crore, voluntary contributions of ₹909.64 crore, total receipts of ₹6,723.07 crore, total payments of ₹439.38 crore, and a closing balance of ₹6,283.68 crore as on March 31, 2023.

Audited financial statements for 2019-20, 2020-21, 2021-22, and 2022-23 are available on the PM CARES website.

The absence of publicly



Chaired by the PM, the fund was set up in 2020 to aid relief efforts during public health emergencies and other disasters. FILE PHOTO

available audit statements after 2022-23 is "extremely concerning", Anjali Bhardwaj, co-convenor of the National Campaign for People's Right to Information, told *The Hindu*.

"The fund was presented as having been set up by the Union government, making it appear to be a public authority. Government employees also contributed from their salaries," Ms. Bhardwaj said.

'Not a public authority'

"However, when information regarding the funds collected and spent was sought, the government maintained that the Trust is not a public authority under the RTI Act. The Ministry of Corporate Affairs also retrospectively amended the relevant

The fund remains outside ambit of RTI Act, parliamentary scrutiny, and audit by the CAG: activist

rules under the Companies Act. At present, PM CARES remains outside the ambit of the RTI Act, parliamentary scrutiny, and audit by the Comptroller and Auditor-General," she said.

"There is apprehension that the secrecy surrounding PM CARES could create conditions similar to those seen in the electoral bonds case, where lack of transparency enabled *quid pro quo*, regulatory inaction, and extortion. The trust is operating in a completely opaque manner," she said.

The PM CARES Fund is

registered as a public charitable trust under the Registration Act, 1908, according to information released by the Union government. The Trust deed was registered in New Delhi on March 27, 2020.

The government has maintained that the fund consists entirely of voluntary contributions from individuals and organisations, and receives no budgetary support.

It has also stated that the Prime Minister serves as the *ex officio* Chairperson of the Trust, while the Union Ministers of Defence, Home Affairs, and Finance are its *ex officio* trustees.

Donations to the PM CARES Fund qualify for 100% deduction under Section 80G of the Income Tax Act, 1961 and are also eligible to be counted as CSR expenditure under the Companies Act, 2013.

The Fund has also been granted exemption under the Foreign Contribution (Regulation) Act (FCRA), enabling it to receive donations from individuals and organisations based overseas through a designated foreign contribution account. The PM CARES Fund has primarily financed India's COVID-19 response and emergency health infrastructure.

31J7. Activists raise alarm over PM CARES denial of access to audit statements

पीएम केयर्स के ऑडिट विवरण सार्वजनिक न होने पर कार्यकर्ताओं ने जताई चिंता

- The **Prime Minister's Citizen Assistance and Relief in Emergency Situations (PM CARES) Fund** has not made public any **audited financial statements** for the past **three financial years**, even as activists raise concerns about its **transparency**.
प्रधानमंत्री नागरिक सहायता एवं आपातकालीन स्थिति राहत कोष (PM CARES Fund) ने पिछले तीन वित्तीय वर्षों के लेखापरीक्षित (ऑडिटेड) वित्तीय विवरण सार्वजनिक नहीं किए हैं, जबकि सामाजिक कार्यकर्ताओं ने इसकी पारदर्शिता को लेकर चिंता व्यक्त की है।
- The Fund, a **public charitable trust** established in **March 2020** amid the **COVID-19** crisis to support relief efforts during **public health emergencies** and other disasters, is chaired by the **Prime Minister** and funded entirely through **voluntary contributions**, according to information released by the **Union government**.
मार्च 2020 में कोविड-19 संकट के दौरान सार्वजनिक स्वास्थ्य आपात स्थितियों और अन्य आपदाओं में राहत कार्यों के समर्थन हेतु स्थापित यह सार्वजनिक धर्मार्थ ट्रस्ट, प्रधानमंत्री की अध्यक्षता में संचालित होता है तथा केंद्र सरकार द्वारा जारी जानकारी के अनुसार इसका पूरा वित्तपोषण स्वैच्छिक योगदानों से किया जाता है।
- The last publicly available **audited financial statements**, for the **financial year 2022–23**, show an **opening balance of ₹5,415.65 crore**, **voluntary contributions of ₹909.64 crore**, **total receipts of ₹6,723.07 crore**, **total payments of ₹439.38 crore**, and a **closing balance of ₹6,283.68 crore** as on **March 31, 2023**.
सार्वजनिक रूप से उपलब्ध अंतिम लेखापरीक्षित वित्तीय विवरण, जो वित्तीय वर्ष 2022–23 से संबंधित हैं, के अनुसार प्रारंभिक शेष राशि ₹5,415.65 करोड़, स्वैच्छिक योगदान ₹909.64 करोड़, कुल प्राप्तियाँ ₹6,723.07 करोड़, कुल भुगतान ₹439.38 करोड़ तथा 31 मार्च 2023 तक समापन शेष राशि ₹6,283.68 करोड़ थी।
- Audited financial statements** for 2019–20, 2020–21, 2021–22, and 2022–23 are available on the **PM CARES** website.
2019–20, 2020–21, 2021–22 तथा 2022–23 के लेखापरीक्षित वित्तीय विवरण PM CARES की वेबसाइट पर उपलब्ध हैं।
- The **absence of publicly available audit statements after 2022–23** is “**extremely concerning**”, **Anjali Bhardwaj**, co-convenor of the **National Campaign for People's Right to Information**, told **The Hindu**.
2022–23 के बाद के ऑडिट विवरणों का सार्वजनिक रूप से उपलब्ध न होना "अत्यंत चिंताजनक" है, यह बात नेशनल कैम्पेन फॉर पीपल्स राइट टू इन्फॉर्मेशन की सह-संयोजक अंजलि भारद्वाज ने द हिन्दू से कही।
- The **Ministry of Corporate Affairs** also retrospectively amended the relevant rules under the **Companies Act**.
कॉर्पोरेट कार्य मंत्रालय ने कंपनी अधिनियम के अंतर्गत संबंधित नियमों में भी पूर्वव्यापी प्रभाव से संशोधन किया।
- At present, **PM CARES** remains outside the ambit of the **RTI Act**, **parliamentary scrutiny**, and audit by the **Comptroller and Auditor-General**, she said.
उन्होंने कहा, “वर्तमान में PM CARES सूचना का अधिकार अधिनियम, संसदीय जांच तथा भारत के नियंत्रक एवं महालेखा परीक्षक (CAG) द्वारा लेखा-परीक्षा के दायरे से बाहर है।”
- “There is apprehension that the **secrecy** surrounding **PM CARES** could create conditions similar to those seen in the **electoral bonds** case, where lack of **transparency** enabled **quid pro quo**, **regulatory inaction**, and **extortion**.
“यह आशंका है कि PM CARES के आसपास बनी हुई गोपनीयता ऐसी परिस्थितियाँ उत्पन्न कर सकती है जैसी इलेक्टोरल बॉन्ड मामले में देखी गई थीं, जहाँ पारदर्शिता के अभाव ने पारस्परिक लाभ (Quid Pro Quo), नियामकीय निष्क्रियता तथा जबरन वसूली को बढ़ावा दिया।



- The trust is operating in a completely **opaque** manner," she said.
उन्होंने कहा, "यह ट्रस्ट पूरी तरह अपारदर्शी तरीके से कार्य कर रहा है।"
- The **PM CARES Fund** is registered as a **public charitable trust** under the **Registration Act, 1908**, according to information released by the **Union government**.
केंद्र सरकार द्वारा जारी जानकारी के अनुसार, PM CARES Fund का पंजीकरण पंजीकरण अधिनियम, 1908 के अंतर्गत एक सार्वजनिक धर्मार्थ ट्रस्ट के रूप में किया गया है।
- The **Trust deed** was registered in **New Delhi** on **March 27, 2020**.
ट्रस्ट डीड का पंजीकरण 27 मार्च, 2020 को नई दिल्ली में किया गया था।
- The **government** has maintained that the fund consists entirely of **voluntary contributions** from individuals and organisations, and receives no **budgetary support**.
सरकार का कहना है कि यह कोष पूरी तरह व्यक्तियों और संगठनों के स्वैच्छिक योगदान से बना है तथा इसे किसी प्रकार का बजटीय समर्थन प्राप्त नहीं होता।
- It has also stated that the **Prime Minister** serves as the **ex officio Chairperson** of the Trust, while the **Union Ministers of Defence, Home Affairs, and Finance** are its **ex officio trustees**.
सरकार ने यह भी कहा है कि प्रधानमंत्री ट्रस्ट के पदेन अध्यक्ष (Ex Officio Chairperson) हैं, जबकि रक्षा, गृह और वित्त मंत्रालयों के केंद्रीय मंत्री इसके पदेन न्यासी (Ex Officio Trustees) हैं।
- Donations to the PM CARES Fund** qualify for **100% deduction** under **Section 80G** of the **Income Tax Act, 1961** and are also eligible to be counted as **CSR expenditure** under the **Companies Act, 2013**.
PM CARES Fund में दिए गए दान आयकर अधिनियम, 1961 की धारा 80G के अंतर्गत 100% कर कटौती के पात्र हैं तथा कंपनी अधिनियम, 2013 के अंतर्गत इन्हें कॉर्पोरेट सामाजिक उत्तरदायित्व (CSR) व्यय के रूप में भी गिना जा सकता है।
- The **Fund** has also been granted exemption under the **Foreign Contribution (Regulation) Act (FCRA)**, enabling it to receive donations from individuals and organisations based overseas through a designated **foreign contribution account**.
इस कोष को विदेशी अंशदान (विनियमन) अधिनियम (FCRA) के अंतर्गत भी छूट प्रदान की गई है, जिससे यह निर्धारित विदेशी अंशदान खाते के माध्यम से विदेशों में स्थित व्यक्तियों और संगठनों से दान प्राप्त कर सकता है।
- The **PM CARES Fund** has primarily financed India's **COVID-19 response** and **emergency health infrastructure**.
PM CARES Fund का मुख्य उपयोग भारत की COVID-19 प्रतिक्रिया तथा आपातकालीन स्वास्थ्य अवसंरचना के वित्तपोषण के लिए किया गया है।

GS Paper II: International Relations		31 July 2026
TOPICS COVERED		
31J7	House panel calls for dedicated polar and Arctic affairs official संसदीय समिति ने ध्रुवीय एवं आर्कटिक मामलों के लिए समर्पित अधिकारी नियुक्त करने की सिफारिश की	
31J7	The Bay of Bengal as India's SHANTI anchor भारत की 'शांति (SHANTI)' पहल के आधार के रूप में बंगाल की खाड़ी	
31J7	Migrants flood into Spain's Ceuta exclave from Morocco मोरक्को से प्रवासी स्पेन के स्यूटा एन्क्लेव में बड़ी संख्या में पहुँचे	



House panel calls for dedicated polar and Arctic affairs official

GS II: IR
Kanor Bhattacharjee
NEW DELHI

A report by the Committee on External Affairs of the 18th Lok Sabha has recommended that a dedicated representative or Ambassador be appointed to coordinate with relevant countries on polar and Arctic-related policy matters.

The External Affairs Ministry has informed the panel that the Arctic-related policies are looked after by the Polar Cell in the United Nations Economic and Social Division of the Ministry even though many countries are now adopting an "institutionalised" approach to handle Arctic-related issues, including appointing a Polar/Arctic Affairs Ambassador.

The committee suggested that India should upgrade its present 'observer status' in the Arctic Council to the level of 'member status' whenever the Council undergoes a review.

cil undergoes a review.

It was told by the Ministry that it consults Indian embassies and Ministries to follow a "focused and sustained" approach on such issues.

'Dedicated desk'

The report noted that all Arctic Council Member States and most Non-Arctic Observer States such as Japan, China, Singapore, and South Korea have Polar/Arctic Ambassador with a dedicated Polar/Arctic Affairs Desk.

The role of India in the Arctic Council is of importance as the Himalayan range is considered to be the third pole because of ice deposits that have a global importance. The committee expressed satisfaction in India's performance as part of the Arctic Council but noted that "there are several limitations on Observer countries as they cannot take part in decision making process".

समिति ने सुझाव दिया कि भारत को आर्कटिक परिषद (Arctic Council) में अपने वर्तमान 'पर्यवेक्षक (Observer) दर्जे' को परिषद की समीक्षा होने पर 'सदस्य (Member) दर्जे' तक उन्नत करने का प्रयास करना चाहिए।

- The report noted that all Arctic Council Member States and most Non-Arctic Observer States such as Japan, China, Singapore, and South Korea have a Polar/Arctic Ambassador with a dedicated Polar/Arctic Affairs Desk.

रिपोर्ट में उल्लेख किया गया है कि सभी आर्कटिक परिषद के सदस्य देश तथा अधिकांश गैर-आर्कटिक पर्यवेक्षक देश, जैसे जापान, चीन, सिंगापुर और दक्षिण कोरिया, के पास एक ध्रुवीय/आर्कटिक राजदूत तथा एक समर्पित ध्रुवीय/आर्कटिक मामलों का प्रकोष्ठ है।

- The role of India in the Arctic Council is of importance as the Himalayan range is considered to be the third pole because of ice deposits that have a global importance.

आर्कटिक परिषद में भारत की भूमिका महत्वपूर्ण है क्योंकि हिमालय पर्वतमाला को उसके वैश्विक महत्व वाले विशाल हिम भंडार के कारण तीसरा ध्रुव (Third Pole) माना जाता है।

31J7. House panel calls for dedicated polar and Arctic affairs official

संसदीय समिति ने ध्रुवीय एवं आर्कटिक मामलों के लिए समर्पित अधिकारी नियुक्त करने की सिफारिश की

- A report by the Committee on External Affairs of the 18th Lok Sabha has recommended that a dedicated representative or Ambassador be appointed to coordinate with relevant countries on polar and Arctic-related policy matters.

18वीं लोकसभा की विदेश मामलों की संसदीय समिति की एक रिपोर्ट में सिफारिश की गई है कि ध्रुवीय एवं आर्कटिक संबंधी नीतिगत विषयों पर संबंधित देशों के साथ समन्वय के लिए एक समर्पित प्रतिनिधि या राजदूत नियुक्त किया जाए।

- The External Affairs Ministry has informed the panel that the Arctic-related policies are looked after by the Polar Cell in the United Nations Economic and Social Division of the Ministry even though many countries are now adopting an "institutionalised" approach to handle Arctic-related issues, including appointing a Polar/Arctic Affairs Ambassador.

विदेश मंत्रालय ने समिति को बताया कि आर्कटिक संबंधी नीतियों का दायित्व मंत्रालय के संयुक्त राष्ट्र आर्थिक एवं सामाजिक प्रभाग के अंतर्गत कार्यरत पोलर सेल द्वारा संभाला जाता है, जबकि अनेक देश अब आर्कटिक संबंधी मुद्दों के समाधान के लिए "संस्थागत दृष्टिकोण" अपना रहे हैं, जिसमें ध्रुवीय/आर्कटिक मामलों के राजदूत की नियुक्ति भी शामिल है।

- The committee suggested that India should upgrade its present 'observer status' in the Arctic Council to the level of 'member status' whenever the Council undergoes a review.



The Bay of Bengal as India's SHANTI anchor

SSIR

The Bay of Bengal region, one of the world's most disaster-prone regions, lacks coordinated mechanisms to respond to natural disasters. Non-traditional threats such as climate-induced disasters, illegal fishing, cyber vulnerabilities, and supply chain disruptions require regional cooperation beyond bilateral aid or maritime power. This gap – growing capacity without shared norms – highlights the need for stronger maritime security.

On July 13, External Affairs Minister S. Jaishankar introduced Securing Holistic Advancement through Norms, Trust and Integrity (SHANTI) while launching India's candidature for the UN Security Council (UNSC) for the 2028-29 term. Building on Security and Growth for All in the Region (SAGAR) and Mutual and Holistic Advancement for Security and Growth Across Regions (MAHASAGAR), SHANTI provides a normative framework for shared maritime spaces, with the Bay of Bengal serving as the ideal region to operationalise it before expanding it across the wider Indo-Pacific.

The Bay's centrality

In recent years, the Bay of Bengal has moved from the margins to the centre of India's strategic thinking. Historically, it connected South and Southeast Asia through trade, culture, religion, and the exchange of ideas long before the Indo-Pacific entered diplomatic vocabulary.

Today, it links India's Act East policy with the Association of Southeast Asian Nations (ASEAN), provides access to the strategically vital Malacca Strait, and connects the eastern Indian Ocean to major global trade and energy routes. China's heavy reliance on the strait – often described as the "Malacca dilemma" – has driven its expanding regional presence through ports and infrastructure projects, intensifying geopolitical competition. As economic connectivity, maritime



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The Bay of Bengal is an ideal testing ground for SHANTI's security vision

governance, and strategic rivalry converge in the Bay, SHANTI offers a framework that places norms, trust, and integrity – not tonnage – as the currency of durable advantage.

A maritime security evolution

As such, SHANTI can be best understood as a logical evolution of its maritime outreach. SAGAR, articulated in 2015, supplied the vision of 'equity in development' and MAHASAGAR, announced in 2025, expanded that vision's scope recognising the interconnectedness of security (both vertically among nations and horizontally in threat perception) in the wider Indo-Pacific and the Global South. SHANTI offers the grammar of maritime security framework, the norms, trust and integrity in cooperation through which vision can be translated into tangible action that is well received and reciprocated. It shifts the emphasis from competition to demand driven cooperation, from influence to non-prescriptive institution-building, and from episodic crisis management to long-term resilience. This shift – from protecting maritime spaces to governing shared maritime commons – reflects India's new security mantra. If SAGAR was a statement of intent and MAHASAGAR a statement of reach, SHANTI is a statement of method to situate India as the "preferred security partner" and "first responder".

Because the Bay of Bengal is a single interconnected system, its cyclones, fish stocks, shipping lanes and pollution cross national boundaries almost by default, and its littoral states face remarkably similar challenges and concerns – disaster risk reduction and response, coastal erosion, fisheries management, port resilience, undersea cable protection and climate adaptation.

Unlike the western Indian Ocean, which is marked by active conflict, fragile economy and

contested spaces, the Bay of Bengal's strategic geography encourages cooperation. Yet, the region suffers less from a lack of institutions than from institutional fragmentation. What is missing is a common framework to align existing mechanisms. SHANTI fills this gap by providing principles to strengthen cooperation in maritime security, disaster response, the blue economy, and environmental resilience. India's geography gives it a natural convening role, but its centrality should rest on regional stewardship – not dominance – through trust-based, rules-based cooperation among states with shared challenges and opportunities.

Principles to practice

Taken together, these conditions make the Bay of Bengal India's most governable maritime sub-region – a natural laboratory where SHANTI can move from principle to practice before shaping wider cooperation across the Indian Ocean. This was reflected at the July 2026 BIMSTEC National Security Advisers' meeting in New Delhi, where member-states adopted common principles for maritime law enforcement and humanitarian assistance and disaster relief. BIMSTEC also agreed to hold its first joint maritime security exercise in the Bay, in November 2026, while a white shipping information-sharing agreement remains under discussion. These initiatives reflect the norm-building and trust-based cooperation that SHANTI seeks to promote. Its lasting contribution, therefore, will not be another acronym in India's maritime lexicon, but a redefinition of security – from deterrence to resilience, from rivalry to shared responsibility, and from crisis management to governance of the shared maritime commons.

The views expressed are personal

31J7. The Bay of Bengal as India's SHANTI anchor

भारत की 'शांति (SHANTI)' पहल के आधार के रूप में बंगाल की खाड़ी

- The **Bay of Bengal** region, one of the world's most **disaster-prone regions**, lacks **coordinated mechanisms to respond to natural disasters**.
बंगाल की खाड़ी क्षेत्र, जो विश्व के सबसे अधिक आपदा-प्रवण क्षेत्रों में से एक है, प्राकृतिक आपदाओं से निपटने के लिए समन्वित तंत्र से वंचित है।
- Non-traditional threats** such as **climate-induced disasters, illegal fishing, cyber vulnerabilities, and supply chain disruptions** require regional cooperation beyond bilateral aid or maritime power.
गैर-पारंपरिक खतरे, जैसे जलवायु-जनित आपदाएँ, अवैध मत्स्यन, साइबर कमजोरियाँ तथा आपूर्ति शृंखला में व्यवधान, द्विपक्षीय सहायता या समुद्री शक्ति से आगे बढ़कर क्षेत्रीय सहयोग की माँग करते हैं।
- On **July 13**, External Affairs Minister **S. Jaishankar** introduced **Securing Holistic Advancement through Norms, Trust and Integrity (SHANTI)** while launching India's candidature for the **UN Security Council (UNSC)** for the **2028-29** term.
13 जुलाई को विदेश मंत्री एस. जयशंकर ने 2028-29 कार्यकाल के लिए संयुक्त राष्ट्र सुरक्षा परिषद (UNSC) में भारत की उम्मीदवारी की घोषणा करते हुए **Securing Holistic Advancement through Norms, Trust and Integrity (SHANTI)** पहल प्रस्तुत की।
- Building on **Security and Growth for All in the Region (SAGAR)** and **Mutual and Holistic Advancement for Security and Growth Across Regions (MAHASAGAR)**, **SHANTI** provides a normative framework for shared maritime spaces, with the **Bay of Bengal** serving as the ideal region to operationalise it before expanding it across the wider **Indo-Pacific**.
Security and Growth for All in the Region (SAGAR) तथा Mutual and Holistic Advancement for Security and Growth Across Regions (MAHASAGAR) पर आधारित SHANTI साझा समुद्री क्षेत्रों के लिए एक मानक-आधारित रूपरेखा प्रदान करती है, जिसमें **बंगाल की खाड़ी** को व्यापक **हिंद-प्रशांत (Indo-Pacific)** क्षेत्र में विस्तार से पहले इसके क्रियान्वयन हेतु आदर्श क्षेत्र माना गया है।

The Bay's centrality

बंगाल की खाड़ी का केंद्रीय महत्व

- Historically, it connected South Asia and Southeast Asia through trade, culture, religion, and the exchange of ideas long before the Indo-Pacific entered diplomatic vocabulary. ऐतिहासिक रूप से, हिंद-प्रशांत (Indo-Pacific) की अवधारणा के कूटनीतिक शब्दावली में आने से बहुत पहले ही यह दक्षिण एशिया और दक्षिण-पूर्व एशिया को व्यापार, संस्कृति, धर्म तथा विचारों के आदान-प्रदान के माध्यम से जोड़ती रही है।
- Today, it links India's Act East Policy with the Association of Southeast Asian Nations (ASEAN), provides access to the strategically vital Malacca Strait, and connects the eastern Indian Ocean to major global trade and energy routes. वर्तमान में यह भारत की एक ईस्ट नीति को दक्षिण-पूर्व एशियाई राष्ट्रों के संगठन (ASEAN) से जोड़ती है, रणनीतिक दृष्टि से अत्यंत महत्वपूर्ण मलक्का जलडमरूमध्य तक पहुँच प्रदान करती है तथा पूर्वी हिंद महासागर को वैश्विक व्यापार और ऊर्जा मार्गों से जोड़ती है।
- China's heavy reliance on the strait — often described as the "Malacca dilemma" — has driven its expanding regional presence through ports and infrastructure projects, intensifying geopolitical competition. चीन की इस जलडमरूमध्य पर अत्यधिक निर्भरता, जिसे प्रायः "मलक्का दुविधा" कहा जाता है, ने बंदरगाहों और अवसंरचना परियोजनाओं के माध्यम से उसकी क्षेत्रीय उपस्थिति का विस्तार किया है, जिससे भूराजनैतिक प्रतिस्पर्धा और तीव्र हो गई है।
- As economic connectivity, maritime governance, and strategic rivalry converge in the Bay of Bengal, SHANTI offers a framework that places norms, trust, and integrity — not tonnage — as the currency of durable advantage. जैसे-जैसे आर्थिक संपर्क, समुद्री शासन तथा रणनीतिक प्रतिस्पर्धा बंगाल की खाड़ी में एक-दूसरे से जुड़ रहे हैं, SHANTI ऐसी रूपरेखा प्रस्तुत करती है जो स्थायी सामरिक लाभ के आधार के रूप में जहाज़ों की क्षमता (टन भार) के स्थान पर मानदंडों, विश्वास और अखंडता को प्राथमिकता देती है।

Maritime security evolution

समुद्री सुरक्षा का विकास

- SAGAR, articulated in 2015, supplied the vision of 'equity in development' and MAHASAGAR, announced in 2025, expanded that vision's scope recognising the interconnectedness of security (both vertically among nations and horizontally in threat perception) in the wider Indo-Pacific and the Global South. 2015 में प्रस्तुत SAGAR ने 'विकास में समानता' का दृष्टिकोण प्रदान किया, जबकि 2025 में घोषित MAHASAGAR ने हिंद-प्रशांत क्षेत्र तथा वैश्विक दक्षिण में सुरक्षा की परस्पर संबद्धता (राष्ट्रों के बीच ऊर्ध्वाधर तथा खतरों की धारणा के स्तर पर क्षैतिज) को स्वीकार करते हुए इस दृष्टिकोण का विस्तार किया।
- If SAGAR was a statement of intent and MAHASAGAR a statement of reach, SHANTI is a statement of method to situate India as the "preferred security partner" and "first responder". यदि SAGAR संकल्प का प्रतीक था और MAHASAGAR पहुँच का, तो SHANTI भारत को "प्राथमिक सुरक्षा साझेदार" तथा "प्रथम प्रतिक्रिया प्रदाता" के रूप में स्थापित करने की कार्यपद्धति का प्रतीक है।
- SHANTI fills this gap by providing principles to strengthen cooperation in maritime security, disaster response, the blue economy, and environmental resilience. SHANTI समुद्री सुरक्षा, आपदा प्रतिक्रिया, नौली अर्थव्यवस्था तथा पर्यावरणीय लचीलापन के क्षेत्रों में सहयोग को सुदृढ़ करने के सिद्धांत प्रदान कर इस कमी को दूर करता है।
- This was reflected at the July 2026 BIMSTEC National Security Advisers' meeting in New Delhi, where member-states adopted common principles for maritime law enforcement and humanitarian assistance and disaster relief. यह जुलाई 2026 में नई दिल्ली में आयोजित BIMSTEC राष्ट्रीय सुरक्षा सलाहकारों की बैठक में परिलक्षित



हुआ, जहाँ सदस्य देशों ने समुद्री कानून प्रवर्तन तथा मानवीय सहायता एवं आपदा राहत के लिए साझा सिद्धांतों को अपनाया।

Migrants flood into Spain's Ceuta enclave from Morocco

GS II: IR
Agence France-Presse
CEUTA

Madrid on Thursday said it would despatch soldiers to Ceuta to ensure security after hundreds of migrants entered the Spanish north African enclave from Morocco, mainly by swimming, and reported nine deaths.

Migration from Morocco into Spain's two north African territories, Ceuta and Melilla, has long been a politically sensitive issue between the two countries, as thousands cross the border at times.

"The Armed Forces will reinforce the Civil Guard in the exercise of its powers and any others that may be necessary to maintain security in the city of Ceuta," Spain's Interior Ministry said.

It did not specify how many soldiers would be

Migration has long been a politically sensitive issue between the two countries

sent to the small territory of 18.5 square km but said the Civil Guard's strength there would be nearly doubled from the current level of 80. It will also send diving teams and coastguard ships.

According to footage broadcast by public television, Civil Guard officers were merely monitoring the entry of migrants near a border post in the south of Ceuta.

This is the largest inflow of people into Ceuta since May 2021, when more than 10,000 migrants entered the autonomous city from Morocco in just two days.

Spanish authorities

have recovered the bodies of nine migrants who died while trying to reach Ceuta by swimming, the Spanish government's delegation in the enclave said.

The President of Ceuta, Juan Vivas, said Wednesday that 1,500 migrants had come to Ceuta by sea in the past few days.

Mr. Vivas had already warned that the reception centres were saturated as the number of people entering was more than 200 a day.

Police and Civil Guards in Ceuta appeared to do little to intervene, though some officers attempted to direct the arrivals to the local migrant reception centre.

Spain's Prime Minister Pedro Sanchez said on X that his government was "focussed on providing an immediate response" to the crisis in Ceuta.

31J7. Migrants flood into Spain's Ceuta enclave from Morocco

मोरक्को से प्रवासी स्पेन के स्यूटा एन्क्लेव में बड़ी संख्या में पहुँचे

- Migration from **Morocco** into Spain's two North African territories, **Ceuta and Melilla**, has long been a politically sensitive issue between the two countries, as thousands cross the border at times.

मोरक्को से स्पेन के दो उत्तरी अफ्रीकी क्षेत्रों स्यूटा और मेलिला में प्रवासन लंबे समय से दोनों देशों के बीच एक राजनीतिक रूप से संवेदनशील मुद्दा रहा है, क्योंकि समय-समय पर हजारों लोग सीमा पार करते हैं।

GS Paper III: Economy		31 July 2026
TOPICS COVERED		
31J7	Jewellery loses sheen; gold ETFs glitter, says WGC आभूषणों की चमक फीकी, गोल्ड ETF का आकर्षण बढ़ा: WGC	

31J7 Govt. launches Protection & Indemnity cover for mariner
सरकार ने नाविकों के लिए 'प्रोटेक्शन एंड इंडेम्निटी' बीमा कवर लॉन्च किया

Jewellery loses sheen; gold ETFs glitter, says WGC

GS III: Economy
Lalendu Mishra
MUMBAI

India's penchant for gold in the form of jewellery weakened, even as the yellow metal's appeal as investments gained traction with Gold exchange traded funds (ETFs) witnessing increased demand in April-June (Q1) 2026, according to the World Gold Council (WGC) data.

Owing to high gold prices and excess volatility witnessed in the past months following the West Asia conflict, the overall demand for gold in India fell 6% to 131.4 tonnes in Q1FY27 from 139.7 tonnes in the year-ago period, WGC said.

India's gold demand (in value) for the quarter was ₹1,98,100 crore, up by 50% year-on-year (YoY). Total jewellery demand in India for the quarter decreased by 15% YoY to 75.1 tonnes. However, the value of jewellery demand increased to ₹1,13,210 crore compared with ₹84,200 crore a year ago, as per WGC.

Total Bar and Coin demand increased 9% YoY to 50.3 tonnes and in value terms it was 73% more at ₹75,750 crore.

ETF push

As per WGC data, total gold ETF demand for the quarter was at 4.2 tonnes, up 49% YoY. In value terms,



In India, the average quarterly price of gold during April-June was ₹1,50,744.8 REUTERS

gold ETF demand was ₹6,300 crore, up by 136% YoY.

Total gold recycled in Q1 fell 17% YoY to 19.2 tonnes. Total gold imports reduced by 23% YoY to 98.1 tonnes.

The US\$/oz average quarterly price for the quarter was \$4,506.3 in comparison to \$3,280.4 in the year-ago period. INR/10g average quarterly price for the quarter was ₹1,50,744.8 against ₹94,875.9 a year ago (without import duty and GST).

Sachin Jain, Regional CEO, India, WGC, said consumers kept prioritising gold amid high-price environment. "They are adapting their purchasing decisions to balance affordability with long-term value. Although volumes fell to around 75 tonnes, jewellery demand in value terms grew 34% to ₹1,13,210 crore, supported by seasonal buying."

31J7. Jewellery loses sheen; gold ETFs glitter, says WGC

आभूषणों की चमक फीकी, गोल्ड ETF का आकर्षण बढ़ा: WGC

India's penchant for gold in the form of jewellery weakened, even as the yellow metal's appeal as an investment gained traction, with Gold Exchange Traded Funds (ETFs) witnessing increased demand in April-June (Q1) 2026, according to the World Gold Council (WGC).

वर्ल्ड गोल्ड काउंसिल (WGC) के अनुसार, अप्रैल-जून (Q1)

2026 के दौरान भारत में आभूषण के रूप में सोने की मांग

कमजोर पड़ी, जबकि निवेश के रूप में इसकी लोकप्रियता बढ़ी और गोल्ड एक्सचेंज ट्रेडेड फंड (ETF) की मांग में उल्लेखनीय वृद्धि दर्ज की गई।

31J7. Govt. launches Protection & Indemnity cover for mariner

सरकार ने नाविकों के लिए 'प्रोटेक्शन एंड इंडेम्निटी' बीमा कवर लॉन्च किया

The Department of Financial Services under the Ministry of Finance on Thursday launched India's first sovereign-backed Protection and Indemnity insurance product under the Bharat Maritime Insurance Pool (BMIP), designed by the New India Assurance Company.

वित्त मंत्रालय के अंतर्गत वित्तीय सेवा विभाग ने गुरुवार को भारत के पहले संप्रभु-समर्थित (Sovereign-backed) प्रोटेक्शन एंड इंडेम्निटी (Protection & Indemnity) बीमा उत्पाद का शुभारंभ भारत मैरीटाइम इश्योरेंस पूल (BMIP) के तहत किया, जिसे न्यू इंडिया एश्योरेंस कंपनी ने विकसित किया है।

On this occasion, Financial Services Secretary Sanjay Lohia handed over the first Protection and Indemnity insurance policy document to Shipping Corporation of India Ltd.

इस अवसर पर वित्तीय सेवा सचिव संजय लोहिया ने शिपिंग कॉर्पोरेशन ऑफ इंडिया लिमिटेड को पहली प्रोटेक्शन एंड इंडेम्निटी बीमा पॉलिसी का दस्तावेज़ सौंपा।

- The insurance provides financial protection against third-party liabilities, including crew liability, cargo liability, pollution liability, wreck removal, and a 24x7 port



correspondent network, with an **indemnity limit** of up to **\$1.5 billion**, through the combined capacity of the pool, the **Finance Ministry** said in a statement.

वित्त मंत्रालय के अनुसार, यह बीमा तृतीय-पक्ष दायित्वों के विरुद्ध वित्तीय सुरक्षा प्रदान करता है, जिसमें कू दायित्व, कार्गो दायित्व, प्रदूषण दायित्व, जहाज़ के मलबे को हटाने (Wreck Removal) की लागत तथा 24x7 पोर्ट संवाददाता नेटवर्क जैसी सुविधाएँ शामिल हैं। इस बीमा के अंतर्गत पूल की संयुक्त क्षमता के माध्यम से 1.5 अरब अमेरिकी डॉलर तक की क्षतिपूर्ति (Indemnity) सीमा उपलब्ध है।

- Since the operationalisation of the **BMIP** by the **Department of Financial Services (DFS)** on **May 12**, backed by a **sovereign guarantee**, the pool has demonstrated substantial **market acceptance** and has successfully met its primary objective of providing uninterrupted **war risk insurance** capacity to Indian stakeholders, the statement said.

वक्तव्य के अनुसार, 12 मई को वित्तीय सेवा विभाग (DFS) द्वारा संप्रभु गारंटी (Sovereign Guarantee) के समर्थन के साथ **BMIP** के परिचालन शुरू होने के बाद से इस पूल को व्यापक बाज़ार स्वीकृति मिली है और इसने भारतीय हितधारकों को निर्बाध युद्ध जोखिम बीमा (War Risk Insurance) उपलब्ध कराने के अपने प्रमुख उद्देश्य को सफलतापूर्वक पूरा किया है।

GS Paper III: Science and Technology		31 July 2026
TOPICS COVERED		
31J7	Girl's death in China reveals human cost of unregulated science चीन में बालिका की मृत्यु ने अनियमित विज्ञान की मानवीय कीमत को उजागर किया	
31J7	What Alanine aminotransferase level can reveal about liver health एलानिन एमिनोट्रांसफेरेज़ स्तर यकृत के स्वास्थ्य के बारे में क्या बता सकता है	

Girl's death in China reveals human cost of unregulated science

The case has prompted debate about 'first in human' gene-editing trials, particularly for rare but serious disorders; investigation into the death has raised important questions about the oversight of such an experimental personalised trial and the way the researchers and their institutions communicated their choices

ASHU SAKI
Vasudevan Mukunth

A six-year-old girl in China died in March 2025 after receiving what researchers said they believed was the world's first base-editing therapy directed at the brain, according to an investigation by *Science* and *Retraction Watch*.

The investigation has raised important questions about the oversight of an experimental personalised gene-editing trial and the way the researchers and their institutions communicated their choices.

The girl had Snijders Blok-Campana syndrome, a rare neurodevelopmental disorder caused by a mutation in the CHD3 gene. Although the condition affects intellectual development and its severity varies widely, most people with the condition live full lives.

But that such a case could still clear the bar for an unprecedented, high-risk brain intervention says something about a society uneasy with disability and enamoured of techno-scientific interventions.

The girl's parents sought the experimental treatment after learning of research led by neuroscientist Zilong Qiu at the Shanghai Jiao Tong University.

Base-editing is a more recent invention than CRISPR-Cas9. The American biochemist David Liu developed it at the Broad Institute in 2016 after finding a way to convert one DNA letter directly into another – say, C to T – without cutting both strands of the DNA double helix, as Cas9-based editing does.

As a result, base-editing is, in principle, more 'gentle' and can cause fewer unintended mutations. Its development thus renewed hopes that gene-editing could graduate from being a proof of concept and to treating rare disorders caused by defects in single genes.

That said, the memory of He Jiankui, the Chinese scientist who announced in 2018 that he had edited the genomes of twin girls at the embryonic stage without adequate ethical review, scientific justification, and even disclosure to his own university, has weighed heavily on the field.

He was later sentenced to three years in prison for his actions, and the episode forced China to tighten its rules on human gene-editing research. But as the new investigation by *Science* and *Retraction Watch* has found, the rifts between what the law says and how it is enforced have remained wide enough for a similar failure to recur.

Dr. Qiu's team developed a personalised base-editing therapy designed to correct the genetic mutation in the child's brain cells.

However, delivering the 'editor' to the brain required the researchers to inject large doses of adeno-associated viruses (AAVs), which are known to carry risks of severe immune reactions.

According to the investigation report, the child's parents helped finance much of the therapy's development, contributing around \$860,000 (₹8.3 crore) from their personal savings and money borrowed from relatives.



Big case: The investigation has raised important questions about the oversight of an experimental personalised gene-editing trial and the way the researchers and their institutions communicated their choices. REUTERS

The treatment proceeded as a clinical trial initiated by the investigator at the Xinhua Hospital in Shanghai. This process did not require the National Medical Products Administration, China's national drug regulator, to review it first.

However, the report has quoted independent experts expressing concerns with several aspects of the process – including whether preclinical studies (in animals) had adequately proved the treatment's safety for human use.

Toxicology studies in monkeys reportedly found that all the treated animals had developed liver injury and one monkey's kidneys were damaged as well.

However, the researchers proceeded to inject the therapy into the girl's cerebrospinal fluid on March 24, 2025. Within days, she developed a fever and kidney damage, and died a week later.

Hospital's internal review

An internal review at the hospital concluded that the treatment was certainly linked to her death, and listed the cause of death as thrombotic microangiopathy, a complication that has previously been associated with genetic therapies involving high doses of AAVs.

According to *Science* and *Retraction Watch*, neither the researchers nor the hospital disclosed the girl's death at the time. Several months later, local health authorities fined the hospital for shortcomings in trial oversight and registration, but did not sanction the lead researcher.

The family said they later asked that a research paper related to the trial be withdrawn, arguing that it did not reflect the appropriate outcomes.

The investigation also examined a paper published in *Nature* earlier this year describing the underlying preclinical work. Some independent experts questioned aspects of the reported data and argued that the journal should

examine the underlying evidence and funding disclosures.

Nature said it had not been informed of the patient's death or the regulatory issues before publication and that such information would have been considered during editorial review.

The case has prompted renewed debate about 'first in human' gene-editing trials, particularly for rare but serious disorders. In June 2024, *Nature* had reported a similar story in India: researchers across the country raced against time to develop a treatment for Udit Saraf, a 20-year old with familial encephalopathy with neuroserpin inclusion bodies, or FENIB – a rare and aggressive brain disorder with symptoms similar to dementia.

Sadly, Udit passed away before the treatment was ready, although the Sarafs, who helped fund the tests, and the researchers expressed hope afterwards that their efforts could help other people with FENIB.

The researchers' challenges included identifying the mutation, engineering the base-editor, manufacturing the AAV vectors, and improving institutional capacity to produce a gene therapy of direct clinical value.

Both instances – Udit Saraf and the little girl in China – began with researchers committing themselves to a schedule they knew would be uncertain and high-pressure.

But in Udit's case, while the researchers worked 12-hour days and called in favours from colleagues abroad, their efforts also had to contend against the friction of collaborating across borders and dealing with the U.S.'s more cautious regulatory system. In India as well, Arkasubhra Ghosh at Narayana Nethralaya Eye Hospital was waiting for approval from Indian regulators to manufacture AAVs when Udit passed away. In China, on the other hand, the researchers faced little resistance going

from decision to injection.

Of course, this doesn't mean India treats disability better than China. Stigma against disabled people here is widespread, sustained by misunderstanding, misinformation, and prejudice.

Affordable gene-editing

The Sarafs' experience also opened a window to India's opportunity to become a centre for affordable gene-editing as it wound through Ghosh's ambition to manufacture AAVs within the country and Debojyoti Chakraborty's efforts at the CSIR-Institute of Genomics and Integrative Biology to develop inexpensive CRISPR therapies.

That said, while India offered the possibility of acting before it was too late, the researchers might have faced similar questions over the preclinical evidence and toxicology reports and regulatory penalties against hospitals if the treatment had gone awry.

Finally, none of the regulatory philosophies at work in these episodes guarantees success. One emphasised exhaustive reviews before 'first in human' use. Another allowed investigator-initiated trials to proceed more rapidly. A third was willing to devolve trust based on reputation and clinical stature over external reviews, including of safety.

In fact, while the law in China forbids charging patients for unproven therapy, it is also written narrowly enough for informal payments to individual researchers – such as the gifts to Dr. Qiu – to fall outside its purview.

Communicating risk and the possibility of death also have thorny social dimensions, including the optimism surrounding frontier biotechnologies and the emotional entanglement that can develop between families and researchers. (mukunth.v@thehindu.co.in)

THE GIST

A six-year-old girl in China died in March 2025 after receiving what researchers said they believed was the world's first base-editing therapy directed at the brain, according to an investigation by *Science* and *Retraction Watch*. The girl had Snijders Blok-Campana syndrome, a rare neurodevelopmental disorder caused by a mutation in the CHD3 gene.

The treatment proceeded as a clinical trial initiated by the investigator at the Xinhua Hospital in Shanghai. This process did not require the National Medical Products Administration, China's national drug regulator, to review it first. However, the report has quoted independent experts expressing concerns with several aspects of the process – including whether preclinical studies (in animals) had adequately proved the treatment's safety for human use.

An internal review at the hospital concluded that the treatment was certainly linked to her death, and listed the cause of death as thrombotic microangiopathy, a complication that has previously been associated with genetic therapies involving high doses of AAVs.

31J7. Girl's death in China reveals human cost of unregulated science चीन में बालिका की मृत्यु ने अनियमित विज्ञान की मानवीय कीमत को उजागर किया

- A six-year-old girl in China died in March 2025 after receiving what researchers said they believed was the world's first base-editing therapy directed at the brain, according to an investigation by *Science* and *Retraction Watch*.

चीन में छह वर्षीय एक बालिका की मार्च 2025 में मृत्यु हो गई, जब उसे वह उपचार दिया गया जिसे

शोधकर्ताओं ने मस्तिष्क के लिए विश्व की प्रथम बेस-एडिटिंग चिकित्सा बताया। यह जानकारी *Science* तथा

Retraction Watch की एक जाँच के अनुसार सामने आई।



THE HUMAN BODY MADE OF TRILLIONS OF CELLS

Normally, cells follow a fixed life cycle:

1 THEY GROW

Cells increase in size and prepare for their function.

2 THEY DIVIDE

Cells divide to form new cells through a process called cell division.

3 THEY PERFORM THEIR FUNCTION

Cells carry out specific functions to keep the body working properly.

4 THEY DIE WHEN OLD OR DAMAGED

Old or damaged cells stop working and are removed by the body.

WHAT IS A CELL?

The human body is made up of trillions of cells. Cells are the basic building blocks of life. Different types of cells work together to form tissues, organs and systems.

WHAT HAPPENS IN CANCER?

- 1. NORMAL CELL**
A normal cell grows, divides and functions in a controlled way.
- 2. DNA DAMAGE (MUTATION)**
Changes (mutations) in the DNA of a cell cause it to grow abnormally.
- 3. UNCONTROLLED GROWTH**
The damaged cell divides uncontrollably and forms a mass called a tumour.
- 4. SPREAD (METASTASIS)**
Cancer cells can invade nearby tissues and spread to other parts of the body through blood or lymph.

BENIGN vs MALIGNANT

BENIGN TUMOUR

- Non-cancerous
- Grows slowly
- Remains in one place
- Does not spread

MALIGNANT TUMOUR

- Cancerous
- Grows rapidly
- Invades nearby tissues
- Can spread to other organs (metastasis)

TYPES OF CELLS

Nerve Cell

Muscle Cell

Red Blood Cell

Bone Cell

Skin Cell

White Blood Cell

RISK FACTORS FOR CANCER

Tobacco Use

Excess Alcohol

Unhealthy Diet & Obesity

Physical Inactivity

Infections (HPV, Hepatitis B & C)

Radiation (UV & X-ray)

Pollution & Chemicals

Family History & Genetics

CAN CANCER BE PREVENTED?

Avoid tobacco in any form

Eat a balanced diet (fruits & vegetables)

Exercise regularly

Maintain healthy weight

Vaccination (HPV, Hepatitis B)

Regular screening and check-ups

Avoid excessive sun exposure

Seek early medical advice

TREATMENT OPTIONS

Surgery

Chemotherapy

Radiation Therapy

Immunotherapy

Targeted Therapy

Hormone Therapy

- The investigation has raised important questions about the **oversight** of an experimental personalised **gene-editing trial** and the way the researchers and their institutions communicated their choices.

इस जाँच ने एक प्रायोगिक व्यक्तिगत जीन-संपादन परीक्षण की निगरानी तथा शोधकर्ताओं और उनके संस्थानों द्वारा अपने निर्णयों को संप्रेषित करने के तरीके पर महत्वपूर्ण प्रश्न खड़े किए हैं।

- The girl had **Snijders Blok-Campeau syndrome**, a rare **neurodevelopmental disorder** caused by a mutation in the **CHD3 gene**.

बालिका स्नाइडर्स ब्लॉक-कैम्पो सिंड्रोम से पीड़ित थी, जो CHD3 जीन में उत्परिवर्तन के कारण होने वाला एक दुर्लभ तंत्रिका-विकास संबंधी विकार है।

- Although the condition affects intellectual development and its severity varies widely, most people with the condition live full lives.

यद्यपि यह स्थिति बौद्धिक विकास को प्रभावित करती है और इसकी गंभीरता प्रत्येक व्यक्ति में भिन्न हो सकती है, फिर भी इस विकार से ग्रस्त अधिकांश लोग सामान्य और पूर्ण जीवन जीते हैं।

- **Base-editing** is a more recent invention than **CRISPR-Cas9**.
बेस-एडिटिंग, CRISPR-Cas9 की तुलना में अधिक नवीन तकनीक है।
- The American biochemist **David Liu** developed it at the **Broad Institute** in **2016** after finding a way to convert one DNA letter directly into another — say, **C to T** — without cutting both strands of the DNA double helix, as Cas9-based editing does.
अमेरिकी जैव-रसायनविद् डेविड लियू ने 2016 में ब्रॉड इंस्टीट्यूट में इसे विकसित किया, जब उन्होंने DNA के एक अक्षर को सीधे दूसरे अक्षर में — जैसे C से T — परिवर्तित करने की ऐसी विधि खोजी जिसमें Cas9-आधारित संपादन की तरह DNA की दोनों शृंखलाओं को काटने की आवश्यकता नहीं होती।
- As a result, **base-editing** is, in principle, more '**gentle**' and can cause fewer unintended mutations.
फलस्वरूप, सिद्धांततः बेस-एडिटिंग अधिक सौम्य मानी जाती है और इससे अनपेक्षित उत्परिवर्तनों की संभावना कम होती है।
- Its development thus renewed hopes that **gene-editing** could graduate from being a proof of concept and to treating **rare disorders** caused by defects in single genes.
इसके विकास से यह आशा पुनर्जीवित हुई कि **जीन-संपादन** केवल अवधारणा के प्रमाण तक सीमित न रहकर एकल जीन में दोष के कारण उत्पन्न होने वाले **दुर्लभ विकारों** के उपचार का प्रभावी साधन बन सकता है।
- That said, the memory of **He Jiankui**, the Chinese scientist who announced in **2018** that he had edited the genomes of twin girls at the embryonic stage without adequate ethical review, scientific justification, and even disclosure to his own university, has weighed heavily on the field.
फिर भी, हे जियानकुई की घटना, जिन्होंने 2018 में पर्याप्त नैतिक समीक्षा, वैज्ञानिक औचित्य तथा अपने ही विश्वविद्यालय को सूचित किए बिना भ्रूण अवस्था में जुड़वाँ बालिकाओं के जीनोम संपादन की घोषणा की थी, इस क्षेत्र पर गहरा प्रभाव छोड़ चुकी है।
- **Dr. Qiu's team** developed a personalised **base-editing therapy** designed to correct the genetic mutation in the child's brain cells.
डॉ. चिउ की टीम ने बालिका की मस्तिष्क कोशिकाओं में मौजूद आनुवंशिक उत्परिवर्तन को ठीक करने के उद्देश्य से एक व्यक्तिगत बेस-एडिटिंग चिकित्सा विकसित की।
- However, delivering the 'editor' to the brain required the researchers to inject large doses of **adeno-associated viruses (AAVs)**, which are known to carry risks of severe **immune reactions**.
किन्तु इस 'एडिटर' को मस्तिष्क तक पहुँचाने के लिए शोधकर्ताओं को एडेनो-असोसिएटेड वायरस (AAVs) की बड़ी मात्रा का इंजेक्शन देना पड़ा, जिनसे गंभीर प्रतिरक्षा प्रतिक्रियाओं का जोखिम जुड़ा हुआ माना जाता है।
- **Toxicology studies** in monkeys reportedly found that **all the treated animals had developed liver injury and one monkey's kidneys were damaged as well**.
रिपोर्ट के अनुसार, बंदरों पर किए गए विष-विज्ञान संबंधी अध्ययनों में पाया गया कि उपचार प्राप्त सभी पशुओं में **यकृत क्षति** विकसित हुई तथा एक बंदर की **गुर्दों** को भी नुकसान पहुँचा।
- However, the **researchers proceeded to inject the therapy into the girl's cerebrospinal fluid on March 24, 2025**.
इसके बावजूद, शोधकर्ताओं ने 24 मार्च 2025 को इस चिकित्सा को बालिका के **मस्तिष्क-मेरुदण्डीय द्रव** में इंजेक्ट किया।
- **Within days, she developed a fever and kidney damage, and died a week later**.
कुछ ही दिनों के भीतर उसे तेज़ बुखार और गुर्दों की क्षति हो गई, तथा एक सप्ताह बाद उसकी मृत्यु हो गई।

What Alanine aminotransferase level can reveal about liver health

ASS III, SGT

According to the World Health Organization (WHO), liver diseases account for around two million deaths globally every year. Viral hepatitis alone caused an estimated 1.3 million deaths in 2022, with about 254 million people living with chronic hepatitis B infection and around 50 million with chronic hepatitis C infection. There is also a rising burden of metabolic dysfunction-associated steatotic liver disease (MASLD), previously known as non-alcoholic fatty liver disease, driven by increasing obesity and diabetes.

An early marker

Alanine aminotransferase (ALT), also known as serum glutamic-pyruvic transaminase (SGPT), is an enzyme found predominantly inside liver cells. When these cells are damaged or inflamed, ALT leaks into the bloodstream, making it one of the earliest laboratory markers of liver injury.

Arul Prakash, gastroenterologist and hepatologist, SRM Prime Hospitals, Chennai, says ALT is also present in smaller amounts in muscles and the heart. Therefore, an elevated ALT level does not necessarily indicate liver disease and should prompt further evaluation to identify the source of



Check up: The Union Health Ministry has urged people to monitor alanine aminotransferase (ALT) levels as an early indicator of liver injury. GETTY IMAGES

the abnormality.

ALT is one component of the liver function test, which includes other liver enzymes and measures of liver function. Although ALT is a sensitive indicator of ongoing liver injury, patients can still have significant liver disease despite normal ALT values.

ALT testing is performed on a blood sample, with results typically available within a few hours. Although many laboratories consider ALT levels below 40 units per litre as normal, interpretation depends on the patient's condition. For example, lower thresholds are often applied in people with

chronic hepatitis B or C.

People living with MASLD may have normal or only mildly elevated ALT despite having liver disease. In advanced cirrhosis, ALT levels may return to normal because there are too few functioning liver cells left to release the enzyme. As a result, normal ALT values do not exclude significant or advanced liver disease.

Who should be tested?

ALT testing is already part of most comprehensive health check-ups, says Dinesh Jothimani, director of hepatology, Rela Hospital, Chennai. For adults without recognised risk factors, testing once a year is generally adequate. Those at higher risk may benefit from more frequent monitoring, depending on clinical advice.

People living with obesity, diabetes, thyroid disorders, high cholesterol, viral hepatitis, long-term medication use, alcohol consumption, a family history of liver disease or sedentary lifestyles are at greater risk of liver injury and should undergo regular evaluation, he says.

Dr. Jothimani notes that liver enzyme elevation may occur in acute viral hepatitis, alcohol-related liver disease, MASLD, autoimmune hepatitis and chronic liver diseases. However, many patients remain

asymptomatic because the liver has a remarkable ability to regenerate and continue functioning despite ongoing damage. Symptoms often appear only in advanced stages of disease, making routine screening particularly valuable.

Elevated ALT

An elevated ALT level is not a diagnosis but an indication for further assessment, experts emphasise.

Dr. Prakash says doctors usually perform a complete liver function test, additional blood investigations and, where appropriate, cardiac evaluation to determine the cause. If liver disease is confirmed, treatment depends on the underlying condition. Lifestyle modifications, including reducing alcohol intake, maintaining a healthy weight, limiting excess saturated fat, refined carbohydrates and sugary foods, and increasing physical activity, remain central to managing metabolic liver disease. Viral hepatitis and autoimmune hepatitis require specific medical treatment.

Experts recommend that people with persistently abnormal ALT levels or suspected liver disease undergo further evaluation under the guidance of a medical professional. (athira.elsa@thehindu.co.in)

31J7. What Alanine aminotransferase level can reveal about liver health

एलानिन एमिनोट्रांसफेरेज़ स्तर यकृत के स्वास्थ्य के बारे में क्या बता सकता है

- According to the **World Health Organization (WHO)**, **liver diseases** account for around **two million deaths** globally every year.

विश्व स्वास्थ्य संगठन (WHO) के अनुसार, यकृत रोग प्रत्येक वर्ष विश्वभर में लगभग 20 लाख मृत्यु के लिए उत्तरदायी होते हैं।

- Viral hepatitis alone caused an estimated 1.3 million deaths in 2022**, with about **254 million** people living with **chronic hepatitis B infection** and around **50 million** with **chronic hepatitis C infection**.

केवल वायरल हेपेटाइटिस के कारण 2022 में अनुमानित 13 लाख लोगों की मृत्यु हुई, जबकि लगभग 25.4 करोड़ लोग दीर्घकालिक हेपेटाइटिस-बी संक्रमण तथा लगभग 5 करोड़ लोग दीर्घकालिक हेपेटाइटिस-सी संक्रमण के साथ जीवन व्यतीत कर रहे थे।

- There is also a rising burden of **metabolic dysfunction-associated steatotic liver disease (MASLD)**, previously known as **non-alcoholic fatty liver disease**, driven by increasing **obesity and diabetes**.

इसके अतिरिक्त, मेटाबोलिक डिस्फंक्शन-असोसिएटेड स्टीयाटोटिक लिवर डिज़ीज़ (MASLD), जिसे पहले नॉन-अल्कोहॉलिक फैटी लिवर डिज़ीज़ कहा जाता था, का बोझ भी बढ़ रहा है, जिसका प्रमुख कारण बढ़ता हुआ मोटापा और मधुमेह है।

An early marker

एक प्रारम्भिक संकेतक

- Alanine aminotransferase (ALT)**, also known as **serum glutamic-pyruvic transaminase (SGPT)**, is an enzyme found predominantly inside **liver cells**.

एलानिन एमिनोट्रांसफेरेज़ (ALT), जिसे सीरम ग्लूटामिक-पायरुविक ट्रांसएमिनेज़ (SGPT) भी कहा जाता है, एक एंजाइम है जो मुख्यतः यकृत कोशिकाओं के भीतर पाया जाता है।

- When these cells are damaged or inflamed, ALT leaks into the bloodstream, making it one of the earliest laboratory markers of liver injury.**

जब ये कोशिकाएँ क्षतिग्रस्त या सूज जाती हैं, तब ALT रक्त प्रवाह में पहुँच जाता है, जिससे यह यकृत क्षति का सबसे प्रारम्भिक प्रयोगशाला संकेतकों में से एक बन जाता है।

- Arul Prakash**, gastroenterologist and hepatologist, **SRM Prime Hospitals**, Chennai, says **ALT is also present in smaller amounts in muscles and the heart.**

चेन्नई स्थित एसआरएम प्राइम हॉस्पिटल्स के गैस्ट्रोएंटेरोलॉजिस्ट एवं हेपेटोलॉजिस्ट अरुण प्रकाश के अनुसार, ALT अल्प मात्रा में मांसपेशियों तथा हृदय में भी पाया जाता है।

- Therefore, an elevated ALT level does not necessarily indicate liver disease and should prompt further evaluation to identify the source of the abnormality.
अतः ALT का बढ़ा हुआ स्तर आवश्यक रूप से यकृत रोग का संकेत नहीं देता, बल्कि असामान्यता के वास्तविक कारण का पता लगाने के लिए आगे की जाँच की आवश्यकता होती है।
- ALT is one component of the liver function test, which includes other liver enzymes and measures of liver function.
ALT, लिवर फंक्शन टेस्ट का एक घटक है, जिसमें अन्य यकृत एंजाइमों तथा यकृत की कार्यक्षमता के विभिन्न मापदंड भी सम्मिलित होते हैं।
- Although ALT is a sensitive indicator of ongoing liver injury, patients can still have significant liver disease despite normal ALT values.
यद्यपि ALT चल रही यकृत क्षति का एक संवेदनशील संकेतक है, फिर भी सामान्य ALT स्तर होने पर भी किसी व्यक्ति को गंभीर यकृत रोग हो सकता है।
- ALT testing is performed on a blood sample, with results typically available within a few hours.
ALT की जाँच रक्त के नमूने पर की जाती है और इसके परिणाम सामान्यतः कुछ घंटों के भीतर उपलब्ध हो जाते हैं।
- In advanced cirrhosis, ALT levels may return to normal because there are too few functioning liver cells left to release the enzyme.
उन्नत सिरोसिस की अवस्था में ALT का स्तर पुनः सामान्य हो सकता है, क्योंकि उस समय एंजाइम को मुक्त करने के लिए पर्याप्त सक्रिय यकृत कोशिकाएँ शेष नहीं रहती।
- People living with obesity, diabetes, thyroid disorders, high cholesterol, viral hepatitis, long-term medication use, alcohol consumption, a family history of liver disease or sedentary lifestyles are at greater risk of liver injury and should undergo regular evaluation, he says.
उनके अनुसार, मोटापा, मधुमेह, थायरॉयड विकार, उच्च कोलेस्ट्रॉल, वायरल हेपेटाइटिस, दीर्घकालिक दवा सेवन, शराब का सेवन, यकृत रोग का पारिवारिक इतिहास या निष्क्रिय जीवनशैली वाले लोगों में यकृत क्षति का जोखिम अधिक होता है और उन्हें नियमित जाँच करानी चाहिए।
- Dr. Jothimani notes that liver enzyme elevation may occur in acute viral hepatitis, alcohol-related liver disease, MASLD, autoimmune hepatitis and chronic liver diseases.
डॉ. जोथिमणि बताते हैं कि यकृत एंजाइम का बढ़ा हुआ स्तर तीव्र वायरल हेपेटाइटिस, शराब से संबंधित यकृत रोग, MASLD, स्व-प्रतिरक्षी हेपेटाइटिस तथा दीर्घकालिक यकृत रोगों में देखा जा सकता है।

GS Paper III: Environment		31 July 2026
TOPICS COVERED		
31J7	Clearance in reverse उलटी दिशा में पर्यावरणीय स्वीकृति	



THE HINDU
GS III: Environment

Clearance in reverse

Top court nod for post facto approval must not be read as support for amnesty

India's environmental impact assessment (EIA) regime rests on a single sequencing rule: a project must be appraised before the pickaxe pierces the ground, not after the building is operational. The Supreme Court of India's July 29 order, from a Bench led by the Chief Justice of India, Surya Kant, on post facto clearances, reaffirms that rule even as it hollows it out. By quashing the 2021 Office Memorandum while leaving the door open for the Centre to legalise violations through a statutory notification, the Court's distinction between an administrative order and a notification, is effectively a fig-leaf – a procedural nicety dressed up as respect for environmental norms. The deeper problem that the judgment does not confront is the dissonance between the State-level appraisal machinery and the Centre's law. When State EIA authorities, expert committees and pollution boards routinely discover violations only after a highway, port or steel plant is built, post facto clearance stops being an exception and becomes the design. Large projects are now appraised as a 'fait accompli', their ecological cost weighed only once demolition would cost more than absolution. The Court reasons that governments may frame environmental amnesty schemes much as they do for tax defaults. But the logic that justifies regularising an unauthorised colony for electoral gain cannot be transposed onto works that carve into forests and floodplains. Environmental science exists as a discipline precisely to insist on interconnectedness – that plant, animal, human and microbial systems are bound together, and that damage to one propagates through all. A wetland is not an unregistered plot to be regularised on payment of a fee. Even the argument that these are hospitals and airports meant for public good cannot automatically justify the environmental cost.

Worryingly, that transactional logic now has legal cover. The existing retrospective clearances do exact a fine from those who bypassed the norms – but the Jan Vishwas amendments stripped away the threat of imprisonment for environmental lapses altogether, leaving only monetary penalties thus converting compliance into a 'cost of doing business' entry, which a well-capitalised proponent can budget for. The latest judgment does not examine this shift, but endorses its premise, treating environmental harm as a debt that can be settled after the fact. The Court insists that reducing violations to civil penalties does not weaken the precautionary principle. But a principle meant to prevent irreversible harm cannot be honoured by pricing the harm and collecting the cheque. The consequences are incidents of infrastructure projects getting flattened by serious monsoon activity. The Centre would be well advised to read this order not as a licence to multiply amnesty schemes, but as a mandate to repair the clearance apparatus.

31J7. Clearance in reverse उलटी दिशा में पर्यावरणीय स्वीकृति

- India's environmental impact assessment (EIA) regime rests on a single sequencing rule: a project must be appraised before the pickaxe pierces the ground, not after the building is operational.

भारत की पर्यावरणीय प्रभाव आकलन (EIA) व्यवस्था एक मूलभूत क्रम सिद्धांत पर आधारित है कि किसी परियोजना का मूल्यांकन भूमि पर कार्य प्रारम्भ होने से पहले किया जाना चाहिए, न कि निर्माण पूर्ण होकर उसके संचालन प्रारम्भ होने के बाद।

- The Supreme Court of India's July 29 order, from a Bench led by the Chief Justice of India, Surya Kant, on post facto clearances, reaffirms that rule even as it hollows it out. भारत के सर्वोच्च न्यायालय द्वारा 29 जुलाई को भारत के मुख्य न्यायाधीश सूर्यकांत की अध्यक्षता वाली पीठ द्वारा पश्चात् स्वीकृतियों (Post Facto Clearances) पर दिया गया आदेश इस सिद्धांत की पुनः पुष्टि तो करता है, किन्तु साथ ही उसके वास्तविक प्रभाव को भी कमजोर कर देता है।

- The deeper problem that the judgment does not confront is the dissonance between the State-level appraisal machinery and the Centre's law.

इस निर्णय में जिस गहन समस्या का सामना नहीं किया गया है, वह राज्य स्तरीय मूल्यांकन तंत्र और केंद्र के कानून के बीच विद्यमान असंगति है।

- A wetland is not an unregistered plot to be regularised on payment of a fee.

कोई आर्द्रभूमि (Wetland) ऐसा अनपंजीकृत भूखंड नहीं है जिसे केवल शुल्क जमा करके नियमित किया जा सके।

- Even the argument that these are hospitals and airports meant for public good cannot automatically justify the environmental cost.

यह तर्क भी कि ये अस्पताल और हवाई अड्डे जनहित के लिए बनाए गए हैं, अपने आप में पर्यावरणीय क्षति को उचित नहीं ठहरा सकता।

- Worryingly, that transactional logic now has legal cover. चिंताजनक बात यह है कि इस लेन-देन आधारित सोच को अब विधिक संरक्षण प्राप्त हो गया है।

- The existing retrospective clearances do exact a fine from those who bypassed the norms — but the Jan Vishwas amendments stripped away the threat of imprisonment for environmental lapses altogether, leaving only monetary penalties, thus converting compliance into a 'cost of doing business' entry, which a well-capitalised proponent can budget for.

वर्तमान पूर्वव्यापी पर्यावरणीय स्वीकृतियों के अंतर्गत नियमों का उल्लंघन करने वालों से जुर्माना अवश्य लिया जाता है, किन्तु जन विश्वास संशोधनों ने पर्यावरणीय उल्लंघनों के लिए कारावास का प्रावधान समाप्त कर दिया है और केवल आर्थिक दंड शेष रखा है, जिससे अनुपालन एक 'व्यवसाय करने की लागत' (Cost of Doing Business) में परिवर्तित हो गया है, जिसका प्रावधान वित्तीय रूप से सक्षम परियोजना प्रवर्तक पहले से ही अपने बजट में कर सकते हैं।

- The latest judgment does not examine this shift, but endorses its premise, treating environmental harm as a debt that can be settled after the fact.



नवीनतम निर्णय इस परिवर्तन की समीक्षा नहीं करता, बल्कि उसकी मूल अवधारणा को स्वीकार करते हुए पर्यावरणीय क्षति को ऐसे दायित्व के रूप में देखता है जिसका निपटान घटना के बाद भी किया जा सकता है।

- But a principle meant to prevent irreversible harm cannot be honoured by pricing the harm and collecting the cheque.

किन्तु ऐसा सिद्धांत, जिसका उद्देश्य अपूरणीय क्षति को रोकना है, केवल उस क्षति का मूल्य निर्धारित करके और उसका भुगतान प्राप्त करके प्रभावी नहीं बनाया जा सकता।

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