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# CURRENT AFFAIRS FOR UPSC

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**DreamIAS**



## INTERNATIONAL

### TRUMP'S TARIFF OVERREACH: EXCEEDING AUTHORITY OR BOLD LEADERSHIP?

In September 2025, President Donald Trump's aggressive tariff regime—imposing 50% duties on Indian goods and 25% on Chinese imports—has ignited a fierce legal and political battle, with critics accusing him of exceeding presidential authority under the Trade Expansion Act of 1962 (Section 232) and the International Emergency Economic Powers Act (IEEPA). A federal lawsuit filed by a coalition of U.S. importers and trade groups argues that Trump's unilateral hikes, justified as national security measures, stretch these laws beyond congressional intent, potentially violating separation of powers. This controversy, echoing challenges to his first-term tariffs, tests the limits of executive trade power amid escalating global tensions.

Trump's defenders, including Commerce Secretary Howard Lutnick, claim the tariffs counter unfair practices like India's Russian oil imports and China's subsidies, protecting U.S. jobs in steel and semiconductors. The administration cites IEEPA's broad emergency powers, invoked for the Ukraine conflict and supply chain vulnerabilities, to bypass Congress. Yet, legal experts like Simon Lester of the Cato Institute warn that national security pretexts for economic policy risk abuse, as seen in a 2024 appeals court ruling limiting similar steel tariffs. Democrats, led by Senate Minority Leader Chuck Schumer, decry the moves as unconstitutional overreach, demanding legislative curbs like the Trade Review Act to reclaim congressional authority.

The implications are profound. Tariffs have already spiked U.S. consumer prices by 2-3%, per a Peterson Institute analysis, while retaliatory measures from India and China threaten \$500 billion in exports. Posts on X highlight bipartisan frustration, with users like @TradeWatchdog calling it a "power grab that hurts American families." If courts rule against Trump, it could invalidate billions in duties, forcing reliance on WTO disputes—a slow process amid U.S. isolationism.

Trump's tariff strategy may yield short-term leverage, but exceeding authority erodes democratic checks. Congress must assert its role through binding legislation, ensuring trade policy serves national interests without executive fiat. Bold leadership demands accountability, not unchecked power.

### IN TRUMP'S AMERICA, SCIENCE IS UNDER ATTACK

Less than a month after she was confirmed as director of the US's premier health agency, the Centers for Disease Control and Prevention (CDC), infectious disease expert Susan Monarez was forced to leave her job by the Donald Trump Administration. The scientist, who reportedly clashed with US Health Secretary Robert F Kennedy Jr over the revamping of America's vaccine policy, has said she will contest her ouster. The episode marks a new low in the Trump administration's approach to scientific institutions. The CDC has faced budget cuts, layoffs, resignations, and an array of changes to protocols. At least four experts have quit the agency in the wake of Monarez's ouster.

Kennedy has long held the much-discredited view that the administration of vaccines at a young age contributes to autism. In the weeks after assuming office, however, he insisted that his department wanted to set the "highest possible standards". The Health Secretary's first two choices for leaders of key agencies — Marty Makary as head of the US Food and Drug Administration (FDA) and Jay Bhattacharya as director of the National Institutes of Health (NIH)



— invited questions because both experts held controversial views during the Covid pandemic. Even so, their solid academic credentials held out hope that the two appointees wouldn't acquiesce in any effort to undermine public health. But under Bhattacharya, the NIH has pivoted away from cutting-edge research on mRNA vaccines and Makary has allowed FDA officials to set aside inoculation-related decisions of the agency's scientists. The worst fears of Kennedy's critics came true in June when the Health Secretary fired all 17 members of the Advisory Committee that guides the CDC on inoculation-related decisions and named a new panel that comprises more than one vaccine critic. The committee has given up the tradition of inviting representatives of medical bodies like the American Academy of Paediatrics to its meetings. After her appointment in early August, Monarez, the first non-physician to hold the CDC top post since 1953, reportedly came under pressure to rubber stamp the panel's decisions, including conducting investigations on links between vaccines and autism.

The purges at the CDC have underlined fears that the Trump administration is creating new public health risks at a time when measles has made a comeback in the US after more than 25 years. It's heartening, however, that it has faced concerted opposition from scientist groups, including the American Public Health Association, bodies representing federal health workers, and patient advocacy groups. Sustaining this pushback will be crucial to maintaining the integrity of American institutions, often seen as the gold standard of global public health policy.

#### CHINA'S VICTORY DAY PARADE: POWER PROJECTION OR PROVOCATION?

On September 3, 2025, China staged its grandest Victory Day parade in Beijing, commemorating the 80th anniversary of victory in the War of Resistance Against Japanese Aggression. The meticulously choreographed event showcased 12,000 troops, advanced weaponry like the J-20 stealth fighter, and new hypersonic missiles, as reported by Reuters and CGTN. President Xi Jinping's address, emphasizing China's "unyielding spirit" and military modernization, sent a clear message of strength amid tensions with the U.S. and neighbors. Yet, this display of might risks escalating regional anxieties rather than fostering stability.

The parade, attended by leaders from Russia, Serbia, and Laos, highlighted China's global alliances and its \$225 billion defense budget, second only to the U.S., per The Wall Street Journal. Xi's call for a "community with a shared future" contrasted with the parade's show of force, including drones and ICBMs capable of reaching the U.S., per The New York Times. This flexing of muscle, as CNN noted, comes amid South China Sea disputes and U.S. naval operations near Scarborough Shoal, with posts on X like @ChinaStateMedia framing it as a "peaceful" deterrent.

Critics see provocation. Japan and South Korea expressed unease, citing historical sensitivities and China's assertive maritime claims, per South China Morning Post. The parade's timing, following U.S. sanctions on Chinese firms, suggests a defiant response, risking further strain on U.S.-China ties, as @ForeignPolicy on X warned. Domestically, it bolsters Xi's image but distracts from economic challenges like a property sector crisis, per Bloomberg.

China's parade underscores its military prowess but invites miscalculation in a tense Indo-Pacific. Dialogue, not displays, is needed to ease regional fears. The international community must urge Beijing to prioritize diplomacy over saber-rattling, ensuring its rise strengthens global stability, not discord.



## NATIONAL

### AMID TARIFF CHILL, WAR GAMES IN ALASKA BOOST INDIA-US DEFENCE TIES

Indian and American troops have gathered at Fort Wainwright in Alaska for Yudh Abhyas, a two-week military exercise that underlines their steady strategic and defence ties despite the strain in relations between Delhi and Washington over the issue of tariffs, India's purchase of Russian oil and a trade deal that has hit roadblocks.

— At the 21st edition of Yudh Abhyas, the annual joint military exercise from September 1 to 14, the Indian contingent, comprising personnel from a battalion of the Madras Regiment, will train alongside US soldiers from the 1st Battalion, 5th Infantry Regiment 'Bobcats' of the Arctic Wolves Brigade Combat Team, 11th Airborne Division.

— According to the Ministry of Defence, the troops will rehearse a spectrum of tactical drills, including heliborne operations, the employment of surveillance resources and unmanned aerial systems, rockcraft, mountain warfare, casualty evacuation, combat medical aid, and the integrated use of artillery, aviation, and electronic warfare systems.

— Subject-matter experts from both armies will conduct working groups on critical domains, including UAS and Counter-UAS operations, information warfare, communications, and logistics.

— The exercise will conclude in jointly planned and executed tactical manoeuvres, ranging from live-fire exercises to high-altitude warfare scenarios, with a focus on improving capabilities for UN peacekeeping operations and strengthening preparedness for multi-domain challenges, the Ministry said.

— The annual bilateral exercise in the backdrop of ongoing tariff tensions indicates no visible dip in military ties between the two countries despite President Donald Trump flagging that India buys most of its oil and military products from Russia and little from the US.

— The bilateral exercise comes within a week of the US submarine support ship USS Frank Cable visiting Chennai on a scheduled port visit — the Military Sealift Command's second to the region in two years.

#### **Do You Know:**

— In August last year, both countries signed a Security of Supply Arrangement (SOSA) and Memorandum of Agreement regarding the Assignment of Liaison Officers, among other bilateral military agreements that have enhanced defence and security cooperation.

— The vision for bilateral defence cooperation was encapsulated in the September 2013 Joint US-India Declaration on Defence Cooperation and the 2015 Framework for the US-India Defence Relationship, in which the two countries committed themselves to increasing cooperation in the sector.

— Between 2016 and 2020, the two sides signed four more agreements, including the Logistics Exchange Memorandum of Agreement (LEMOA) in 2016, the Communications Compatibility and Security Agreement (COMCASA) in 2018, the Basic Exchange and Cooperation Agreement (BECA) in 2020.



## PETER NAVARRO'S PROVOCATIONS: UNGAINLY IN A DELICATE INDIA-US MOMENT

White House trade advisor Peter Navarro's offensive against India over its purchase of Russian oil touched a shrill new pitch this week, as he sought to defend the 50 per cent tariff the US has imposed on Indian goods. Continuing his attacks against what he called the Kremlin's "oil money laundromat", the senior Trump aide said in an interview on Sunday, "Brahmins are profiteering at the expense of the Indian people... we want that to stop." In an especially delicate moment for India-US ties, remarks like these are intemperate and ungainly. They mark a rash abandonment of the circumspection called for in high diplomacy, which must leave spaces open for manoeuvre, for both sides.

As would be known by now, hectoring of the kind unleashed by Navarro and other members of the current US administration does not work with India — in fact, it can only lead to a hardening of positions. New Delhi has been consistent in prioritising the country's economic and strategic goals amid global turbulence. In the present instance, too, Delhi has refused to succumb to US pressure over Russian oil imports, underlining its sovereign choice and the imperative to meet its own energy needs. The complications that currently cast a shadow over India-US trade ties can certainly not be dismissed; neither can they be addressed by name-calling. If Navarro describes India as the "maharaja of tariffs" — US President Donald Trump called the country "tariff king" — it emerges from the Americans' longstanding frustration over the protectionist walls propped up by New Delhi around domestic industry — something that has also been a bugbear in India's ties with other trading partners. On vexatious issues like these, however, sound and fury can accomplish nothing and progress can only be made through sustained conversation and patient give-and-take.

So far, New Delhi has done well to ignore such loose rhetoric. The India-US relationship, whether on trade, security or technology, is far too consequential for both countries. Reckless words should not be allowed to derail it. This appears to be understood by sections of the Trump administration as well — not too long after Navarro's broadside, a post shared on X by the American embassy in India characterised India-US ties as "a defining relationship of the 21st century", with Secretary of State Marco Rubio saying that "the enduring friendship" between India and the US can help realise the "tremendous potential of our economic relationship". So far, Delhi has shown forbearance. Washington must respond by re-engaging on a more sober note.

## FROM SHIPPING TO SEMICONDUCTORS, INDIA AND SINGAPORE RAMP UP TIES

The prime Ministers of India and Singapore Thursday agreed to adopt a forward-looking and substantive roadmap aimed at setting the vision and direction for the next phase of bilateral relations — and deepen cooperation in eight key areas: economy, skills development, digitalisation, sustainability, connectivity, healthcare and medicine, people-to-people and cultural exchanges; and, defence and security.

— Pointing out that bilateral ties had been elevated to a Comprehensive Strategic Partnership during his visit to Singapore last year, Modi said, "...today, we have prepared a detailed roadmap for the future of our partnership.

— He said the Semiconductor Ecosystem Partnership agreement signed last year has given a new direction to research and development. The increased participation of Singaporean companies in the 'Semicon India' conference is a significant development, Modi said.



- According to a joint statement, the two leaders agreed to “support the growth of India’s semiconductor industry and ecosystem, including through cooperation under the India-Singapore Semiconductor Policy Dialogue; facilitating partnerships with Singapore companies; advancing resilient semiconductor supply chains...”
- On defence and security, the statement said they will deepen technology cooperation in emerging areas such as Quantum Computing, AI, Automation and Unmanned Vessels.
- It also said that “Singapore acknowledges with appreciation India’s interest in the Malacca Straits Patrol”. Both sides agreed to continue cooperation in maritime security and submarine rescue, and strengthen cooperation in Maritime Domain Awareness.
- The joint statement said they agreed to explore collaboration opportunities in “critical and emerging technologies, to promote innovation, inclusive and sustainable economic growth” under the Joint Working Group on Digital Technologies.
- Singapore will assist in establishing a National Centre of Excellence for Skilling in Chennai in the field of advanced manufacturing, Modi said.
- On counter-terrorism cooperation, the two sides reaffirmed their commitment to combat terrorism, including cross-border terror, in all forms and reiterated a zero-tolerance approach.
- They also agreed to strengthen cooperation under the bilateral Mutual Legal Assistance Treaty, which facilitates cooperation in criminal investigations and proceedings.
- According to the PM, they decided that the bilateral Comprehensive Economic Cooperation Agreement and FTA with ASEAN will be reviewed in a time-bound manner to boost trade.

**Do You Know:**

- The year 2025 marks the celebrations of the 60th anniversary of establishment of diplomatic relations between India and Singapore.
- Singapore stands as India’s largest trading partner within ASEAN and ranks as the sixth-largest globally. The significance of this relationship is evident in the robust trade and investment flows between the two countries.
- Over the years, Singapore has become a leading source of Foreign Direct Investment (FDI) into India, contributing a cumulative USD 160 billion since 2000.
- ASEAN is central to India’s ‘Act East’ policy, which focuses on the extended neighbourhood in the Asia-Pacific region. It was formulated as the next step to the ‘Look East’ Policy which originated in the 1990s.
- The India-ASEAN relationship subsequently gained political, strategic and cultural dimensions, including the establishment of institutional mechanisms for dialogue and cooperation. India is part of the ASEAN Plus Six grouping, which includes China, Japan, South Korea, New Zealand and Australia.

**RENEWED FOCUS**

On the first leg of his tour East, Prime Minister Narendra Modi travelled to Japan for a two-day visit for the 15th Annual Summit with Japanese Prime Minister Shigeru Ishiba before moving to  
**4<sup>TH</sup> FLOOR SHATABDI TOWER, SAKCHI, JAMSHEDPUR**



Tianjin to attend the SCO Summit. The last summit, in India, was in 2022. The two sides issued at least a dozen documents, aimed primarily at updating their agreements and giving them a “Next-Gen” focus. Japanese businesses have raised their investment targets in India to \$68 billion and signed about 170 MoUs with Indian partners. Apart from the Joint Statement, there was a 2035 Vision Statement, including eight areas of cooperation such as economic security, mobility and green technology transition. A “Next-Gen State-Prefecture Partnership” highlighted grassroots-level ties and a boosting of direct flight connectivity. India and Japan updated their 2008 Security partnership to include an annual NSA-level dialogue, more engagement over the Quad, Indo-Pacific cooperation and UN Security Council reform. Of interest is their Economic Security Partnership goal to build resilient supply chains and secure critical infrastructure, using Japanese technology to help manufacture and process semiconductor technology in India, as Indian companies face Chinese restrictions on the export of rare earth magnets. Japan’s collaboration with India’s High Speed Rail “Bullet Train” project was showcased, with Mr. Modi and Mr. Ishiba travelling to Miyagi province by train, where they also inspected a semiconductor factory. The joint statement included strong language condemning North Korea’s missile tests and nuclear programme, and the Pahalgam attack and cross-border terrorism, albeit without mention of Pakistan. The leaders also stressed the importance of the upcoming Quad Summit of leaders in India this year, which has come under a cloud over Mr. Trump’s actions against India.

While the text of the India-Japan meetings was largely bilateral, the subtext was geopolitical. Mr. Modi flew to Tokyo in the wake of the massive American tariffs which threaten to upturn the Indian economy. He also chose to make Japan his first stop before his talks with Chinese President Xi Jinping on Sunday towards normalising relations after a four-year standoff. Japan too is concerned about the situation in the East China Sea, and has tensions over trade with the U.S., which led it to cancel a trade negotiation team visit to Washington. The message that Mr. Modi and Mr. Ishiba sent out was that amidst geopolitical turmoil caused by global powers, the India-Japan relationship remains stable and continues to grow.

#### UNMISTAKABLE SHIFT

More than the outcomes, Prime Minister Narendra Modi’s decision to visit China for the Shanghai Cooperation Organisation (SCO) Summit was a clear message from the government on a shift in its foreign policy outlook. It has been seven years since Mr. Modi had travelled to China, and his meeting with Chinese President Xi Jinping was their first such bilateral engagement since the military standoff of 2020. It has been three years since Mr. Modi attended the SCO summit, a Eurasian grouping seen as decidedly anti-western. Meanwhile, photographs of the bonhomie between Mr. Modi, Mr. Xi and Russian President Vladimir Putin evoked memories of an inactive Russia-India-China (RIC) trilateral. The bilateral meeting with China saw the two leaders give their approval to the normalisation process initiated in October 2024, leading from troop disengagement along the LAC. The two sides agreed to fast-track the boundary resolution process being discussed by their Special Representatives. They also gave the green light for the resumption of direct flights, visa facilitation, and the building of economic ties to “stabilize world trade”. As Mr. Modi committed to “taking forward ties ...based on mutual trust, respect and sensitivity”, Mr. Xi called for the “Dragon (China) and the Elephant (India) to come together”. Such bonhomie was unthinkable even a year ago, and it is clear that it has been driven, in some measure, by the U.S. moves to impose tariffs and sanctions on India, and New Delhi’s sense of mistrust about the Trump administration’s intentions. This allowed Mr. Modi and his delegation, for the moment, to side-step some of the concerns India has had over China’s actions, including its support to



Pakistan during Operation Sindoor, the blocking of Indian moves on UNSC reforms and NSG membership, and holds on designating Pakistan-based terrorists.

It was significant that the Tianjin declaration included strong language against the “cross-border movement of terrorists”, albeit condemning the Pahalgam attack and attacks in Balochistan against Pakistani forces, in equal measure. The declaration also saw the entire SCO membership find common ground on contentious issues such as the humanitarian crisis in Gaza, and condemnation of U.S.-Israeli strikes on Iran, although India maintained its opposition to the paragraph supporting China’s Belt and Road Initiative. Mr. Xi’s plans for an SCO Development Bank, and Mr. Modi’s suggestion of initiating a “Civilisational Dialogue” between SCO members found mention. While the outcomes and the optics made for what Mr. Modi described as a “productive” visit to China, his itinerary missed some opportunities for closer engagement with leaders from India’s neighbourhood and the Global South, as he skipped the “SCO Plus” Summit.

## SCO SUMMIT

— The 25th Meeting of the Council of Heads of State of the Shanghai Cooperation Organization (SCO) was held in Tianjin, China, from 31 August to 1 September 2025.

— The SCO declaration condemned the Pahalgam terror attack, which reference was omitted during the defence ministers meeting of SCO in June.

— PM Modi outlined India’s vision and policy regarding SCO. It is built on three pillars that are

S – Security

C – Connectivity

O – Opportunity

— Civilisation Dialogue Forum: PM Modi also proposed the formation of a ‘Civilisation Dialogue Forum’ to enhance people-to-people ties in the SCO, stating that this would provide a global platform for the countries to share ancient civilisation, culture, traditions, and literature.

— Global Governance Initiative (GGI): Chinese President Xi Jinping proposed the Global Governance Initiative (GGI) at the SCO plus leaders’ summit as he advocated practising multilateralism.

— Dialogue Partner Status to Lao People’s Democratic Republic: A decision was taken to grant the Lao People’s Democratic Republic the status of SCO Dialogue Partner and to grant SCO Observer status with the Commonwealth of Independent States.

— City of Cholpon-Ata designated “Tourist and Cultural Capital of the SCO” for 2025–2026: In accordance with the Organization’s tradition, the city of Cholpon-Ata in Kyrgyzstan was designated the “Tourist and Cultural Capital of the SCO” for 2025–2026.

— Kyrgyz Republic to host next SCO Summit: The chairmanship for 2025–2026 has passed to the Kyrgyz Republic. The head of Kyrgyzstan named the theme of the Kyrgyz chairmanship as “25 years of the SCO: together for a stable world, development, and prosperity”.



## About SCO

SCO was established on June 15, 2001, in Shanghai as an international organisation. It consists of 10 member countries- India, Iran, Kazakhstan, China, Kyrgyzstan, Pakistan, Russia, Tajikistan, Uzbekistan, and Belarus. India and Pakistan became full members in 2017. Belarus is the latest to join in 2023.

The organisation has two permanent bodies: the Secretariat in Beijing, China, and the Regional Anti-Terrorist Structure (RATS) in Tashkent.

Russian and Chinese are the official languages of the SCO.

## INDIA-CHINA: THE MAKING OF A BORDER

India has a complicated history with regards to its border with China. The border was the product of two empires — the Manchu and the British. Being in the Himalayas and in an unpopulated area, it was not precise.

After Independence, it would have been prudent for both countries to sit and lay down a precise and accurate border. Unfortunately, India took the position that it knew where the border was and that there was no need for negotiations. The Indian position was based on its confidence in British-era maps, but not on actual control on the ground.

### The beginning of the conflict

While neither India nor China had a permanent presence in the Aksai Chin, a barren, high-altitude desert, China in order to facilitate its control of Tibet built a highway through the Aksai Chin from Xinjiang and occupied it. Similarly, in the east, India established control over Tawang, a major monastery town in what is now Arunachal Pradesh. It did so on the basis of the fact that it had signed a border agreement with Tibet in 1914, at a time when Tibet had been independent, which defined the boundary by the so-called McMahon Line.

The Chinese suggested various ways to deal with what they said was an undefined border. In 1959, they proposed that the two sides accept a Line of Actual Control as the border and move forces 20 kms back from it. In 1960, Zhou Enlai, former Premier of China, came to New Delhi and proposed a swap where India would concede the Chinese position in Aksai Chin in exchange for Chinese acceptance of India's claim over Arunachal Pradesh.

However, India refused. When India belatedly tried to recapture Aksai Chin, it led to friction with China and eventually resulted in the 1962 India-China war. After the war, the Chinese withdrew to the areas north of the McMahon Line in the east, but in the west (Ladakh), they retained some areas they had captured in the war.

### Post war developments

For nearly one and a half decades, both sides stayed away from the border. In 1975, India constituted a high-level China Study Group to monitor the Sino-Indian border. It was under the directions of this body that the border was mapped with satellite imagery, and Indian police/Army patrols were ordered to regularly police the border by establishing patrolling points along it.

In February 1979, Atal Bihari Vajpayee, who was the foreign minister of the then Janata Party government, visited Beijing and became the first senior Indian leader to go there since the war.



Vajpayee, a veteran parliamentarian, had been a critic of Nehru's China policy. But in 1979, he saw his mission as one to restore normalcy with India's two neighbours, Pakistan and China. Though his visit had to be cut short because of the Chinese invasion of Vietnam, it did succeed in restoring a degree of normalcy in India-China ties. The Chinese motivation for accepting the Indian outreach was to ensure that New Delhi did not get too close to the Soviet Union which was, at the time, viewed as China's principal antagonist.

Deng Xiaoping, China's supreme leader, suggested a revival of the 1960 Zhou proposal. In June 1980, in an interview with Krishan Kumar, Editor of Vikrant, a now defunct defence journal, Deng said that China could recognise the McMahon Line if India was willing to recognise the existing status quo. The Chinese repeatedly tried to push this proposal but the Indian government, now headed by Indira Gandhi, comprised of officials who had not forgiven China for the 1962 "betrayal", saw this as an effort to trade one chunk of Indian territory for another.

In 1983, the Chinese went a step further and proposed not just a swap, but also that India should concede areas their forces had captured in 1962 in Ladakh. This proposal was named the 'LAC Plus', and it also was not accepted by the Indian government.

#### **A time for negotiations**

Nevertheless, the two sides resumed their border talks with the first round being held in December of 1981. The initial talks did not yield much. The Chinese pushed their package deal, while India wanted the talks to be held sector by sector. Therefore, the two sides were unable to come to an agreement. By the fifth round of talks in September 1984, the Indian side felt that the Chinese were coming around to their view, but they were mistaken. Even as the sixth round began in November 1985, Chinese Vice-Minister Liu Shuqing informed his Indian counterpart, Secretary (East) A.P. Venkateswaran, that there was a bigger dispute in the eastern sector, and that India would have to make unspecified concessions here for the Chinese to be able to give concessions in the west. Though they did not state it at the time, they were demanding that India concede the Tawang tract as part of the settlement.

The demand for Tawang was more fundamental, and represented a shift in China's domestic Tibet policy since the monastery was a major centre of Tibetan Buddhism and the area around it had been controlled by Tibet till well after the 1914 agreement.

Further on, Indian and Chinese troops clashed on the border in Nathu La and Cho La in Sikkim in 1967, but things settled down thereafter. In 1975, Sikkim was incorporated into the Indian Union, an action that led to Chinese protests.

In 1983, as part of a reset of the overall Indian security posture against China, Indian officials began visiting Wangdung in the region of the Namka Chu river where the first clashes of the 1962 war had occurred. In 1986, the Chinese occupied this region and triggered a crisis that saw the forward deployment of Indian forces at a pass overlooking Wangdung. Under Operation Falcon, India moved its forces forward along the entire LAC. The Chinese response was haphazard as they were clearly taken aback by this development. In any case, the two sides soon reached an agreement to de-escalate the situation. But the crisis did reveal that the Indian Army was now very different from the force that suffered disaster in 1962.



### Move towards complete normalcy

By 1985, it was clear to the Chinese that the Soviet Union's threat had reduced because of their mis-adventure in Afghanistan. Now in order to check India's increasing closeness to the U.S., China invited Rajiv Gandhi to Beijing as a return for Zhou's 1960 Delhi visit. The Gandhi visit to China in December 1988 was seen as the beginning of the true normalisation of ties that had been sundered by the 1962 war. Deng told Rajiv "let both sides forget the unpleasant period in our past relations." The two sides agreed to restore, improve and develop good neighbourly relations.

As for the border, Premier Li Peng stated that it should be settled on the basis of mutual understanding and mutual accommodation (MUMA). Rajiv Gandhi's response to this was that there should be a "fair and reasonable... mutually acceptable solution to this question." In the meantime, the two sides agreed to develop bilateral relations in other fields which would create the conditions for a "fair and reasonable" settlement of the boundary issue.

This was a decisive break from the past, since till then India had insisted that without the settlement of the boundary issue, there could be no normalisation of ties. This situation suggested that the priority was to maintain peace and tranquillity on the borders. The two countries then eventually re-designated the meeting of their officials as a "joint working group" (JWG) on the border issue to work together for a settlement.

## A HIMALAYAN FLASHPOINT — REVISITING THE LIPULEKH DISPUTE

Prime Minister K. P. Sharma Oli's recent assertion that the Lipulekh Pass lies within Nepal's borders has once again thrust a long-simmering boundary dispute into the limelight. The issue has stirred not just cartographic controversy but also raised fundamental questions on historical treaties, national identity, and the role of diplomacy in resolving festering border disputes.

At issue is a tri-junction region where India, Nepal, and China converge — a high-altitude corridor of strategic and symbolic relevance. Underlying Kathmandu's claim is the Treaty of Sugauli (1816), signed between the Gorkha kingdom and the East India Company. According to Nepal's reading of the Treaty, the border lies along the Mahakali (or Kali) River, of which Lipulekh lies to the east. India, however, contends that the main channel of the Kali River begins at Kalapani — downstream of Lipulekh — and thus regards the pass as Indian territory.

In May 2020, the Oli government amended Nepal's constitution to include Limpiyadhura, Kalapani, and Lipulekh in the national map — a move that was promptly rejected by New Delhi. Now, in August 2025, India and China agreed to reopen border trade through Lipulekh. This step prompted fresh protests from Nepal, including formal diplomatic notes, with PM Oli asserting during his visit to China that Lipulekh unquestionably belongs to Nepal. ([tibetanreview.net](http://tibetanreview.net))

India's response has been swift and emphatic. New Delhi labelled Kathmandu's position "untenable," dismissing the claims as "neither justified nor based on historical facts and evidence." The Indian government also emphasised that border trade through Lipulekh had been ongoing since 1954, predating the current frosty bilateral relations.

### Historical Taproots and Conflicting Interpretations

The dispute over Lipulekh underscores how colonial-era treaties like Sugauli continue to serve as contested anchors for modern boundaries. Both sides rely on different interpretations of terrain, river origins, and watershed boundaries. While Nepal interprets Sugauli's wording literally — all



territory east of the Kali — India refers to administrative records, revenue maps, and British-era understanding of the river’s source.

For Kathmandu, including Lipulekh on its map is a matter of historical justice and national identity. For India, permitting Nepalese claims would unsettle the Himalayan frontier, with strategic implications vis-à-vis China. The region is vital for pilgrimage routes (notably the Kailash-Manasarovar Yatra), trade, and defence infrastructure.

### **The Diplomatic Tightrope and Domestic Politics**

The timing of Oli’s reassertion appears closely entwined with both domestic and international trajectories. At home, asserting territorial claims is a potent political move — bolstering nationalism, shoring up public support, and reinvigorating political identity. Externally, it tests the boundaries of diplomacy with two regional powers — India and China — both of which are vying for influence in Nepal.

Externally, China has urged Kathmandu to take the issue up bilaterally with India, while simultaneously signalling that it respects Nepal’s claim. Meanwhile, India remains open to dialogue: its repeated invitations to resolve “agreed outstanding boundary issues through diplomacy” suggest it is trying to avoid escalation.

### **Moving Forward: The Road Less Contentious**

As tensions mount, both capitals must resist the temptation of dramatic posturing. Disputed maps and trade agreements cannot replace patient diplomacy. A bilateral mechanism — rooted in historical documentation, new geospatial data, and mutual respect — can pave the way.

Confidence-building measures, such as joint surveys or third-party involvement under SAARC or another neutral body, may help. At the same time, dialogue with China — which has reopened trade through Lipulekh — should be coordinated with India to avoid exacerbating tensions.

National pride and territorial integrity need not be mutually exclusive. A balanced, evidence-based approach, shorn of hyperbole, can help preserve peace and chart a constructive path forward — one that respects sovereignty while acknowledging ground realities.

In the Himalayas, boundaries may lie in stone and treaty, but the future of bilateral ties will be shaped by diplomacy’s grace, not cartographic skirmishes.

## **INDIA TO ENACT LAW TO PROTECT ITS INTEREST IN HIGH SEAS, FOLLOWING BBNJ AGREEMENT**

India will enact a new law to safeguard its interests in the international ocean waters following the finalisation of the High Seas Treaty two years ago.

— The Ministry of Earth Sciences has set up a 12-member drafting committee headed by Supreme Court Senior Advocate Sanjay Upadhyay, one of the leading environment lawyers in the country, to prepare the contours of the new law in accordance with the provisions of the new treaty.

— The High Seas Treaty, also known as the Biodiversity Beyond National Jurisdictions (BBNJ), because it deals with activities in international waters, seeks to curb pollution, and excessive resource extraction, while promoting efforts for sustainable use of biodiversity and other marine resources.



- One of the consequences of the new treaty would be the demarcation of protected areas in high seas, similar to national parks or wildlife reserves. High seas are regions beyond the territorial waters and the Exclusive Economic Zones (EEZs) of a nation.
- These international waters, which constitute about 64 per cent of ocean areas, are considered global commons and are currently free for any kind of activity by any country. Every country enjoys equal rights for navigation, overflight, fishing, setting up infrastructure like undersea cables, and even mineral extraction.
- The High Seas Treaty would result in regulation of certain extractive activities, like sea-bed mining, and also enable the conservation and protection of marine life and resources. It also has provisions for equitable benefit sharing from the use of marine genetic resources, for example.
- The treaty would serve as a legally binding international instrument under the UN Convention on the Law of the Sea (UNCLOS), which is a much broader agreement that extends to all oceans and defines the rights and duties of countries in their use of oceans and their resources.
- India has signed on to the BBNJ but has not yet ratified it. So far, 55 countries have ratified the treaty, which is slated to come into force 120 days after ratification by the 60th country. Enactment of a law is not necessary for ratification.
- The 12-member panel headed by Upadhyay has been mandated to look at the issue of marine environment in a comprehensive manner and draft a law that not just safeguards India's interests in the oceans, but also promotes conservation of marine resources.

**Do You Know:**

- It is not that there is no international governance mechanism for the oceans. The 1982 UN Convention on Laws of the Seas, or UNCLOS, is a comprehensive international law that lays down the broad frameworks for legitimate behaviour on, and use of, seas and oceans everywhere.
- It defines the rights and duties of nations regarding activities in the oceans and also addresses issues such as sovereignty, passage rights, and rights of exclusive economic usage. Demarcations of territorial waters and EEZs are a result of UNCLOS.
- The territorial sea (TS) as per UNCLOS, is an area extending up to 12 nautical miles from the base of a country's coastline. The difference between EEZ and TS is that a state has full sovereignty over the waters encompassed within the TS, whereas with regard to the EEZ, the state merely has exclusive sovereign economic rights to substances lying below the surface of the sea.
- UNCLOS sets the general principles for equitable access and usage of ocean resources, and protection and conservation of biodiversity and marine ecology. But it doesn't specify how these objectives have to be achieved.
- This is where the High Seas Treaty comes in. The High Seas Treaty will work as an implementation agreement under the UNCLOS, much like the Paris Agreement works under the UN Framework Convention on Climate Change (UNFCCC).

#### WHAT'S IN NEW FOREIGNERS ACT

Over the past few days, the government has notified various Rules and Orders under The Immigration and Foreigners Act, 2025, which came into effect on September 1.



— The new set of Rules and Orders give effect to a sweeping overhaul of India's system for regulating the entry, stay, and exit of foreign nationals, and identify exemptions available to certain classes of foreigners.

— The Immigration and Foreigners Bill, 2025, was passed by Lok Sabha on March 27 and by Rajya Sabha on April 2, and received the assent of the President on April 4.

— The Act replaced The Passport (Entry into India) Act, 1920; The Registration of Foreigners Act, 1939; The Foreigners Act, 1946; and The Immigration (Carriers' Liability) Act, 2000, consolidating India's regime for the entry, stay, movement, and exit of foreigners under a single statute.

— Exemptions for certain categories of entrants, such as Tibetan refugees, Sri Lankan Tamil refugees, citizens of Nepal and Bhutan, etc., were scattered across multiple orders, and were often not readily accessible or clear.

— Important provisions of The Immigration and Foreigners Act, 2025, along with the Rules and Orders, include:

— Possession of valid documents: All entrants must possess a valid passport or travel document and, if a foreigner, a valid visa — unless explicitly exempted by the Act or by special orders of the central government.

— Entry and exit only via notified posts: The Act lists designated immigration posts, including all major airports, seaports, land border posts, and rail posts, through which foreigners can legally enter and exit India

— Powers of the Immigration Officer: Officers at notified immigration posts have the final authority on entry, exit, and admissibility, and the power to validate or refuse entry or exit on national security grounds.

— Exempted categories: Citizens of Nepal and Bhutan entering India via designated land or air borders (except through China, Macau, Hong Kong, or Pakistan), or possessing valid passports for air entry to other destinations.

— Exempted: Minority community refugees from Afghanistan, Bangladesh, Pakistan (Hindus, Sikhs, Buddhists, Jains, Parsis, and Christians) who fled religious persecution and entered India on or before December 31, 2024, even if without valid travel documents or with documents that subsequently expired.

— Under The Citizenship (Amendment) Act, 2019, (CAA) the entry cutoff date for acquiring Indian citizenship for these minorities is December 31, 2014. This date has not been altered, but special protection from prosecution or detention has been granted to minorities from Afghanistan, Pakistan and Bangladesh for entering India after the cutoff date. Apart from consolidating scattered laws, the Act and Rules introduce the following:

— Digital and electronic records: The digital notification through portals and mobile apps that is required of accommodation providers, hospitals, and universities will create a robust database for enforcement and public health management, and making citizenship decisions.

— With clearly designated officers and electronic records, the margin for error or ambiguity is expected to be reduced. Several offences can now be compounded quickly by paying the prescribed fines, reducing the burden on courts and making resolution more efficient.



— The listed exemptions for Tibetans, Sri Lankan Tamils, and the minority communities from Bangladesh, Afghanistan, and Pakistan have done away with the scope for discretion on a case-to-case basis.

**Do You Know:**

— The CAA benefits thousands of Hindu, Sikh, Buddhist, Jain, Parsi, or Christian migrants from Pakistan, Bangladesh, and Afghanistan who entered India before December 31, 2014, and seek citizenship of India. This group of people has been living in India illegally or on long-term visas (LTV).

— The CAA aims to give citizenship to the target group of migrants even if they do not have valid travel documents as mandated in The Citizenship Act, 1955. The CAA presumes that members of these communities who entered India faced religious persecution in these countries. The law has also cut the period of citizenship by naturalisation from 11 years to five.

— Under the CAA Rules, immigrants from these countries are only supposed to prove the country of their origin, their religion, the date of their entry into India, and the knowledge of an Indian language to apply for Indian citizenship.

#### A DISSENT TO SAFEGUARD THE FUTURE

The dissent by Supreme Court judge, Justice B.V. Nagarathna, against a proposal to elevate Justice Vipul Manubhai Pancholi to the top court was an appeal to protect the future of the court and credibility of the Collegium system of judicial appointments.

Justice Nagarathna, in her note, urged Chief Justice of India (CJI) B.R. Gavai to keep in mind, as the head of the Supreme Court Collegium and pater familias of the judicial fraternity, that decisions taken in the present would have ramifications on the future administration of justice. Her dissent drew strength from the court's own principle that judicial appointments must be free of fear of other power centres. Executive interference in judicial appointments, as Justice Madan B. Lokur wrote in the National Judicial Appointments Commission judgment, would cripple justice administration, for the government was “unashamedly the biggest litigant in the country”.

The dissent indicated the bar, while recommending judges who could become Chief Justices of India, must be set “really high” as they become protectors of the independence of the judiciary in posterity. Justice Pancholi, who was sworn in as a Supreme Court judge on August 29, is in line to be CJI in 2031.

**Lone voice**

The dissent from the lone woman Supreme Court judge is multi-faceted. It did not merely focus on the point that there were other women High Court judges senior to Justice Pancholi. Her reservations touched upon the criteria the Collegium had to consider while assessing a candidate for elevation. A Collegium resolution of July 11, 2024 listed these as criteria for the judges under consideration — merit as demonstrated by the judgments authored by the judges and performance; integrity; the need to ensure diversity in terms of region, gender and community; and the need for inclusion of the marginalised and backward segments of the community.

The train of events leading to the 4:1 division in the Collegium harked back to May 25, 2025 when Chief Justice Gavai broached the subject of the candidacy of Justice Pancholi to the top court.



Justice Nagarathna is said to have expressed her oral dissent. It appeared that Justice Vikram Nath, formerly a Gujarat High Court Chief Justice, too had objected to the proposal. Justice Anjaria, who was senior to Justice Pancholi in the Gujarat High Court, was recommended the next day. Justice Anjaria had fulfilled the criteria of both seniority and regional representation in May 2025. But the proposal to elevate Justice Pancholi, who had been Patna Chief Justice since July 21 this year, to the top court came up again in August. This time, Justice Nagarathna reportedly put in a written dissent requesting the CJI and her other Collegium colleagues to consider the “serious and grave concerns” that led the Collegium to transfer Justice Pancholi from Gujarat to Patna High Court in July 2023. Justice Nagarathna is noted to have said the decision to transfer was made after due deliberation following consultations with Justices M.R. Shah, Nath, J.B. Pardiwala and Aravind Kumar.

Justice Nagarathna requested the Collegium to call for and peruse the minutes of the meeting recommending the transfer in 2023. She asked why a lawyers’ delegation had met the then Chief Justice of India, Justice D.Y. Chandrachud (now retired), in the presence of Justice Shah, and pleaded for the transfer. Justice Nagarathna sought reasons that led Justice Nath to reprimand Justice Pancholi while the former was the Gujarat High Court Justice.

#### **Counter-productive to justice**

The Supreme Court judge, in her dissent, ostensibly noted that Justice Pardiwala’s (former Gujarat High Court judge) opinion was not sought for the proposal to elevate Justice Pancholi as Patna High Court Chief Justice. A section of a 41-page document posted online by the Supreme Court titled, ‘Appointment of High Court Judges’, has a section called the ‘The Role of the Supreme Court Collegium’ in which the first tenet is that “the Chief Justice of India seeks views of the judges of the Supreme Court, outside the Collegium, who are conversant with the affairs of the concerned High Court”.

She reportedly objected to the elevation of Justice Pancholi, who was ranked 57 in the all-India seniority, to the Supreme Court, citing that it would prove “counter-productive” to the administration of justice and risk the credibility of the Collegium. Justice Nagarathna, who is herself in line to be the first woman Chief Justice of India in 2027, raised doubts about whether Justice Pancholi’s prospective Chief Justiceship from October 3, 2031 to May 27, 2033 would be in the interest of the institution.

Justice Nagarathna also presumably asked whether there was a requirement for a third judge from the Gujarat High Court with Justice Pardiwala, who is in the running for Chief Justiceship, and Justice Anjaria already on the Supreme Court Bench. She raised the point that several High Courts were not represented or had inadequate representation in the top court. The High Courts without representation include Jammu and Kashmir, Orissa, Jharkhand, Sikkim, Meghalaya, Tripura and Uttarakhand. The dissent note is said to have argued that there were several meritorious judges senior to Justice Pancholi the Collegium could recommend for the top court.

### **CONCEALING A JUDGE’S DISSENT, ERODING JUDICIARY’S AUTHORITY**

Constitutional democracies are sustained not only by written laws but also by what the South African professor of law, Etienne Mureinik, first described as a “culture of justification”. That is, the idea that every exercise of public power must be explained and defended. As Mureinik put it, “The leadership given by government rests on the cogency of the case offered in defence of its decisions, not the fear inspired by the force at its command.”



Judges in India have routinely invoked this principle to demand accountability from the state. But with reports surfacing in the media of the dissent by Justice B.V. Nagarathna of the Supreme Court of India, on the Collegium's recommendation to elevate Justice Vipul M. Pancholi to the Court, it appears that this culture of justification ends at the Collegium's door. When it comes to the Court selecting its own members, the public seemingly have no right to know.

### **An indictment of the system**

A dissent of this kind ordinarily would represent a moment of reckoning. But the Collegium and its almost total opacity has meant that the opposition has proven not so much a failure as a futile exercise. The resolution uploaded on the Court's website, displaying the recommendation, suggests unanimity. It makes no mention of dissent. We only learnt of Justice Nagarathna's objection through reports in the media. The note that she wrote remains hidden, but we are told that her reservations were "grave." It is unclear whether the dissent was even shared with the Union government, which, within 48 hours of the recommendation, went ahead and notified the appointment.

This gulf, between what we know happened and what we are permitted to know, epitomises the flaws inherent in the system governing how we appoint members to our courts. One of India's senior-most judges may have believed there were compelling reasons why the candidate's elevation should not have gone through, yet both her reasoning and the majority's response remain unknown. No doubt the dissent might only concern a single appointment. It is possible that the other members in the Collegium had overwhelming reasons to support the proposal. But the fact that the public is told nothing at all is itself an indictment of the system — its lack of transparency, its democratic deficit, and its refusal to explain itself to the people in whose name it acts.

The Collegium has been resistant to transparency from its inception. It is a product of judge-made law. Created in the "Second Judges Case" (1993) and entrenched in the "Third Judges Case" (1998), the system vests primacy in the five senior-most judges of the Supreme Court to appoint members of the higher judiciary. They deliberate in private, record decisions with minimal disclosure, and rarely explain their reasoning.

Beginning in 2017, the Collegium began publishing its resolutions. But these were skeletal at best and amounted to little more than formal announcements. For a short period in 2018, the Court uploaded fuller reasons for the Collegium's choices and rejections. However, the experiment was short lived, with the explanation that disclosure might damage reputations.

Justice Nagarathna's dissent reveals the cost of this retreat to secrecy. If even an objection from a serving Supreme Court judge is deemed too sensitive for the public, then we must ask whether the Collegium has not simply embraced opacity but crossed into outright rejection of accountability.

### **The weak defence**

The defence of keeping its reasons confidential has always rested on two claims: that openness can harm the reputation of candidates who are not selected, and that it would expose the system to political pressures. On reasonable scrutiny, both claims collapse.

No doubt, marrying transparency with reputational fairness requires careful handling. But other constitutional democracies seem to manage it better than India does. Britain's Judicial



Appointments Commission, for instance, sets out its criteria openly and issues reports explaining how candidates were assessed. In South Africa, candidates for higher judicial office are interviewed by the Judicial Service Commission, and their suitability debated in public. Neither system is flawless, but both proceed from the recognition that legitimacy flows from openness. India, by contrast, persists in treating the Collegium as a private conclave. Even the existence of dissent reaches us only through leaks. If reputational harm is a genuine concern, the answer must lie in carefully structuring disclosure to mitigate it. Denying justification altogether cannot be the solution. And if political pressure is feared, then secrecy has hardly prevented it. The executive, after all, continues to delay and stonewall inconvenient Collegium recommendations. It can return a name for reconsideration or, on re-recommendation, simply keep the file pending, stopping short of issuing the presidential warrant of appointment.

The stakes here go to the heart of India's democracy. Judges chosen today will shape the outcomes of India's most urgent constitutional questions that range from issues concerning civil liberties to the limits of executive power and the division of authority between the Union and the States. When citizens are informed only that a judge has been elevated, without reasons, or when a dissent by a sitting Supreme Court judge is shrouded in secrecy, institutional legitimacy withers. We quite rightly expect our courts to insist on accountability from other branches of the state. But in doing so, can they claim immunity for themselves?

Justice Nagarathna's dissent has not halted Justice Pancholi's elevation. Indeed, it is possible that the other members of the Collegium had good reasons to support his appointment. What they were, we will never know. But the larger issue here extends beyond a single name. It concerns whether the Court is prepared to live by the very principle it seeks to impose on every other organ of the state: that every exercise of public power must be justified.

In many democracies, anxieties about unelected judges striking down laws are framed as a counter-majoritarian difficulty. How can a system be democratic if those not chosen by the people wield such authority? At first blush, the concern seems real. But it misstates what democracy truly is. Democracy is not simply majoritarian rule by numbers. Properly understood, it is something more: a partnership between citizens that secures rights and ensures that liberty and equality structure public life. Unelected judges play an essential role here, by interpreting the law and by protecting rights against majoritarian excesses.

It is for this reason that the Constitution vests extraordinary prerogative power in an unelected judiciary. Judges are meant to act as independent arbiters, to check and balance government, to protect fundamental liberties. In doing so, they do not undermine democracy but only fulfil its highest aspirations.

#### **The Collegium must accept reform**

However, for the judiciary to retain its standing, the process by which judges are appointed must itself meet the strictest standards of accountability. The Collegium has too often withdrawn into a culture of concealment over justification. Unless it embraces reform, it risks diminishing the very legitimacy on which its authority rests. Too many opportunities for change have been spurned in the past; every step forward has been followed by two steps back, with each retreat eroding the values of transparency and integrity on which democracy depends.

A judiciary that subjects itself to the same standards of openness it demands of others will not weaken its autonomy. On the contrary, it will anchor its independence more securely in the trust and the confidence of the people.



## RECENT RECUSALS IN HIGHER COURTS SEND MIXED SIGNALS ON UPHOLDING TRANSPARENCY

The recent spate of judicial recusals in India's higher courts has thrust into sharp focus the urgent need for formal guidelines governing judges' withdrawals from cases. These incidents, ranging from the opaque recusal of Supreme Court Justice M.M. Sundresh to the commendable transparency shown by Madhya Pradesh High Court Justice Vishal Mishra and an NCLAT judge, reveal a judiciary at a crossroads between tradition and accountability .

In August 2025, Justice Sundresh's recusal from hearing activist Surendra Gadling's bail plea after thirteen adjournments over a year epitomized the problems with the current system. Without providing any reason, his sudden exit further delayed justice for Gadling, who has been incarcerated since 2018 . This case underscores how recusals, while sometimes necessary, can exacerbate justice delivery delays, undermining public confidence and the fundamental right to a speedy trial.

In stark contrast, Justice Vishal Mishra of the Madhya Pradesh High Court set a powerful example by explicitly stating his reason for recusal: a BJP MLA had attempted to contact him regarding an illegal mining case involving the legislator's family. Similarly, NCLAT Judicial Member Justice Sharad Kumar Sharma recorded that a "revered member of the higher judiciary" had approached him for a favourable order. These acts of transparency are laudable exceptions that align with the principle that justice must not only be done but must be seen to be done.

The absence of formal rules governing recusals allows such inconsistencies to persist. Judges enjoy broad discretion to recuse without explanation, creating a system where motives can be easily questioned. This lack of uniformity fuels perceptions of bias, especially in high-profile or politically sensitive cases . The case of whistleblower IFS officer Sanjeev Chaturvedi, who has faced fourteen judicial recusals across various courts, illustrates how frequent and unexplained withdrawals can obstruct justice and erode institutional credibility .

Retired Supreme Court Justice Kurian Joseph has rightly argued that indicating reasons for recusal is part of a judge's constitutional duty to be transparent and accountable. It removes room for attributing motives and strengthens public trust . Conversely, the Bombay High Court's decision to fine a petitioner ₹50,000 for seeking recusal based on unsubstantiated corruption allegations against a judge highlights the need to prevent the misuse of recusal tactics to manipulate judicial assignments.

The higher judiciary must heed these recent examples and initiate reforms. Framing binding guidelines that mandate judges to record reasons for recusal, barring exceptional circumstances, would be a pivotal step. These guidelines should balance transparency with protections against strategic litigation abuse. Additionally, establishing mechanisms to ensure recusals do not cause undue delay—such as immediate reassignment to another bench—is crucial.

The judiciary's legitimacy rests on its unwavering commitment to fairness and accountability. As these recusals show, transparency is not merely an administrative detail but the bedrock of judicial integrity. It is time for the Supreme Court to transform these isolated acts of courage into a standardized practice that reaffirms the nation's faith in justice.

**EXPRESS VIEW ON DENIAL OF BAIL TO UMAR KHALID AND OTHERS IN DELHI RIOTS CASE:  
AN INJUSTICE**

In a ruling that raises serious concerns about due process, and the disturbingly low bar for evidence, and for the standards by which it should be proven in a court of law to justify the prolonged incarceration of individuals, the Delhi High Court has declined bail to Umar Khalid and nine others in the Delhi riots case, more than five years after arrest. The 133-page ruling is a blow to the liberty of the individuals who have been loosely accused of “conspiracy”. It is also a moment to pause and ask fundamental questions — about what constitutes a “terrorist act”, what is the threshold of evidence necessary for the state to label someone a terrorist, and the rigour of the court’s scrutiny of the prosecution’s inferences and claims. The ruling, which announces at the outset that it would confine itself only to a “surface analysis of the evidence”, goes on to give the prosecution the benefit of every doubt, disregards the apparently flimsy nature of its evidence, and shows little or no sensitivity to the grave consequences of denying bail to the accused, without trial, years after incarceration.

The prosecution has argued that the accused conspired to organise “chakka jams”, or road blockades, with the intention of “striking terror” in the national capital. Yet much of the so-called evidence rests on WhatsApp chats, and the testimony of “protected witnesses,” who were present in “secret” meetings and whose statements cannot be tested through cross-examination. Consider, for instance, the account of a protected witness codenamed Pluto, who testified that while delivering biryani to the accused in a North-East Delhi basement, he overheard plans to “burn Delhi using firearms, petrol, and other means and funds had already been arranged for the said purpose.” There are other witnesses who testify that the accused, Sharjeel Imam, told a crowd that the government is anti-Muslim, or that the Citizenship Amendment Act “targets only Muslims.” In the case of Gulfisha, an activist, the court treats her act of creating WhatsApp groups to organise women at protest sites as a conspiratorial assault on the state itself. The court’s refusal to make vital distinctions — between constitutionally protected freedoms, which include the freedom to dissent, and a direct incitement to violence — is extremely disturbing. Instead of interrogating whether any of the accused explicitly incited the riots — a clear standard set by the Supreme Court in past rulings — it accepts the state’s theory of a shadowy conspiracy as sufficient grounds to continue their detention under the stringent Unlawful Activities (Prevention) Act. “If you’re doing something against the nation, you better be in jail till you are acquitted or convicted” — Solicitor General Tushar Mehta’s statement flies in the face of the constitutional guarantee of due process. The court’s abdication lets it stand unchallenged.

Over the last three years, this batch of bail pleas has travelled from one bench to the other in the Delhi High Court. The court does not hold itself accountable for this delay. Instead, it derides the petitioner’s plea to consider it as grounds for granting bail: “A hurried trial would also be detrimental to the rights of both the Appellants and the State”. The Supreme Court always underlines that bail is the rule and jail the exception. A former Chief Justice of India said, proudly, that he granted bail from “A to Z”. The highest court must live up to such words and prevent the miscarriage of justice in the Delhi riots case.



## WHAT IS TOP COURT'S ORDER ON SOCIAL MEDIA?

### The story so far:

On August 25, 2025, the Supreme Court urged the Union government to frame guidelines for regulating social media, observing that influencers often commercialise free speech in ways that can offend the sentiments of vulnerable groups. A Bench of Justices Surya Kant and Joymalya Bagchi directed that the regulations be prepared in consultation with the National Broadcasters and Digital Association (NBDA). The directive comes at a time when nearly 491 million Indians are active on social media, highlighting the challenges of safeguarding free expression while simultaneously protecting individual dignity.

### What were the directions?

The court's order stemmed from an intervention application filed by a non-profit supporting individuals affected by Spinal Muscular Atrophy (SMA), a rare and debilitating genetic disorder. The organisation alleged that stand-up comedians Samay Raina, Vipul Goyal, Balraj Paramjeet Singh Ghai, Sonali Thakkar, and Nishant Jagdish Tanwar had "abused the freedom of speech and expression" by making derogatory comments about individuals suffering from SMA. During the proceedings, the Bench emphasised that the right to free speech does not encompass speech made purely for "commercial purposes". "When you are commercialising free speech, you should also bear in mind not to hurt the sentiments of certain sections of society," Justice Bagchi observed.

Attorney-General R. Venkataramani, appearing for the Union government, assured the court that the Centre would frame guidelines in consultation with stakeholders to ensure "the rights of all parties concerned are adequately protected without impinging upon individual dignity, honour, and respect." The Bench further clarified that such guidelines should not serve merely as a "reaction to any particular incident" but should be designed to address the evolving challenges posed by technology and modern modes of communication. The court also ordered the comedians to issue public apologies on their YouTube channels and other social media platforms.

### When can limits be imposed on free speech?

The Constitution permits restrictions on free speech only on eight narrowly defined grounds under Article 19(2) — the sovereignty and integrity of India, the security of the state, friendly relations with foreign states, public order, decency or morality, contempt of court, defamation, and incitement to offences. "There are already laws in place to regulate expression on these grounds. However, the Supreme Court has consistently held that the state cannot impose restrictions beyond these constitutionally prescribed limits," Jay Vinayak Ojha, research fellow at the Vidhi Centre for Legal Policy, told The Hindu.

In 2015, in the case of *Shreya Singhal v. Union of India*, the Supreme Court struck down Section 66A of the Information Technology (IT) Act, 2000, holding that vague grounds such as "annoyance," "insult," or "hatred" cannot justify the criminalisation of speech. The ruling affirmed that speech which "offends, shocks, or disturbs" remains constitutionally protected, and that restrictions on free speech must satisfy the test of reasonableness under Article 19(2). The principle was reiterated in *Kaushal Kishore v. State of Uttar Pradesh (2023)*, where a Constitution Bench held that the grounds enumerated in Article 19(2) are exhaustive and cannot be expanded, however well-intentioned the attempt. The judges underscored that "no one can either be taxed or penalised for holding an opinion which is not in conformity with the constitutional values".



Similarly, in March 2025, the Supreme Court quashed a criminal case registered by the Gujarat Police, accusing Congress MP Imran Pratapgadhi of inciting discord through a poem. A Bench of Justices A.S. Oka and Ujjal Bhuyan observed that speech may well discomfort even members of the judiciary, but it remains the court's "duty to uphold" and "zealously protect" the fundamental freedom to free speech guaranteed under Article 19(1)(a).

#### **Is commercial speech protected?**

The Supreme Court's jurisprudence on the protection accorded to commercial speech has evolved significantly over time. In *Hamdard Dawakhana v. Union of India* (1959), advertisers challenged the constitutionality of the Drugs and Magic Remedies Act, 1954, which sought to curb misleading advertisements promoting products with supposed "magical" medical remedies. While the court acknowledged that advertising is "no doubt a form of speech," it emphasised that once a commercial advertisement contains an element of trade or commerce, "it no longer falls within the concept of free speech for the object is not propagation of ideas — social, political or furtherance of literature or human thought."

However, this approach was revisited in *Tata Press v. Mahanagar Telephone-Nigam Limited* (1995), where the court held that commercial speech should not be denied constitutional protection merely because business entities issue it. The ruling recognised that commercial advertisements serve the public interest, as they disseminate information in "a democratic economy" and may be of "much more importance to the general public than to the advertiser." Similarly, in *A. Suresh v. State of Tamil Nadu* (1997), the court observed that "where the freedom of speech gets intertwined with business, it undergoes a fundamental change and its exercise has to be balanced against societal interests." Such interpretations led the court to distinguish between two categories of commercial expression — one that advances public interest by facilitating the free flow of information, and another that serves only private commercial interests.

#### **What are the implications?**

According to Mr. Ojha, digital media is already governed by a robust statutory framework. "Social media companies are bound by the IT (Intermediary Guidelines and Digital Media Ethics Code) Rules, 2021, under the IT Act, 2000, which require them to prevent their platforms from being used to disseminate obscene, pornographic, or otherwise harmful content. Social media influencers, too, are not beyond the reach of ordinary criminal law and may be held accountable for what they say online," he said. He cautioned that any additional regulation would have to be drafted with great care so as not to impinge upon the fundamental right to freedom of expression.

Experts told *The Hindu* that the Supreme Court's polyvocal character, shaped by judges' differing approaches, results in inconsistencies in its free speech jurisprudence. Constitutional law scholar Gautam Bhatia has argued that this polyvocality produces a "patchwork jurisprudence" leaving domains such as free speech dependent on discretion of judges, who may at times disregard established precedents.

### THE CHANCELLOR

The recent submission by Kerala Governor Rajendra Vishwanath Arlekar to the Supreme Court of India, contending that the Chief Minister of Kerala has no role in the appointment of the Vice-Chancellors (V-C) of A.P.J. Abdul Kalam Technological University and Digital University Kerala, is another instance of how recent Governors are the political and ideological adversaries of an



elected State government — as seen in Kerala, Tamil Nadu, and, to some extent, West Bengal. Mr. Arlekar had appealed against an attempt by the Court to break the long-standing impasse over V-C appointments to these universities by guiding the creation of search-cum-selection committees and laying down rules. The Governor submitted that the 2018 UGC rules for search-cum-selection committees mandate persons of eminence in higher education and must not be connected in any manner with the university or its colleges. Thus, according to his submission, the Chief Minister, as someone intimately connected to all such institutions in the State, had no role. The draft 2025 UGC Regulations take this further by divesting State governments of a role in appointing V-Cs and bringing it under the Chancellor's purview. While the Court will rule on the merit of Mr. Arlekar's position, it is worth noting that Governors in States ruled by the BJP or its allies do not seem to have such problems with the governments they nominally head.

Governors were originally instruments of colonial power and were retained by independent India. From the very beginning, however, they have often acted as political agents of the ruling party at the Centre. Over time, central and State legislation defined and restricted the discretionary powers of Governors which were vested in them by the Constitution. After Independence, State governments retained the colonial-era practice of having Governors as heads of universities — to continue the stated intention of ensuring independent higher education as well as to have a “father figure” or a wise elder. The Acts passed by State legislatures, such as those for A.P.J. Abdul Kalam University, specifically define who the Chancellor will be. The Governor owes his or her position as Chancellor of a university to the respective State government. Even as the Court circumscribes the gubernatorial powers regarding the signing of Bills into law, State governments are acting decisively against having Governors as Chancellors of State universities — one of the few other domains where Governors have a strong say. Punjab and West Bengal, for instance, have passed a law making the Chief Minister the Chancellor. University heads need to be hands-on, distinguished academicians with a broader profile and vision, and strong managerial skills, rather than political appointees, State or Union.

## THE IMPORTANCE OF INDIA'S FEDERAL DESIGN

### The story so far:

The Supreme Court has recently sought a detailed response from the Centre on the issue of restoration of statehood to Jammu and Kashmir. Considering the significance of the principle of the separation of powers, the top court rightly said that it did not possess all the expertise and that there are some decisions to be made by the government. The court is hearing the plea in Zahoor Ahmed Bhat versus UT of Jammu and Kashmir. It has been argued that the failure to restore statehood to Jammu and Kashmir is affecting the rights of the citizens there. Another argument in this context is that it is also violating the essential features of federalism and thereby the basic structure of the Constitution.

### How are States created?

There are three processes enshrined in the Constitution of India for creating States — admission, establishment and formation. For admission of a new State into the territory of India, the entity should have its own organised political unit. It is also required that admission through acquisition shall be guided by international law. This was the process by which Jammu and Kashmir was admitted into India's territory through the Instrument of Accession in 1947. By executing this Instrument under the provisions of the Indian Independence Act, 1947, the then ruler of Kashmir, Maharaja Hari Singh agreed to accede his State to India.



For establishing a new State, territory shall be acquired as per the definition of acquisition in international law. India acquired Goa and Sikkim and established them as States.

The process of forming a new State has been, in fact, the reorganisation of an existing State which led India to take its number of 14 States in 1956 to 29 States before the enactment of the Jammu and Kashmir Reorganisation Act, 2019. Article 3 of the Constitution provides for this process of reorganisation wherein Parliament may by law — form a new State by separation of territory from any State or by uniting two or more States or parts of States or by uniting any territory to a part of any State; increase the area of any State; diminish the area of any State; alter the boundaries of any State; or alter the name of any State. However, while the Union may diminish the area of a State, it cannot take it away by making it a Union Territory. This would be a step against the federal features of India. Therefore, it is mandatory for the Union to restore the statehood of Jammu and Kashmir. It may wait for sometime depending upon the situation at the ground level.

#### **What about India's federal design?**

India has been made a Union of States which means that it is indivisible and that States have no right to secede. This provision in Article 1 may be interpreted in the sense that the word 'India' reflects a unitary federation while the word 'Bharat' is a cultural connotation which signifies that India has a composite culture and that there is unity in diversity.

Despite being a two-tier system of governance, the word 'federation' is not used but rather 'Union' is written expressly. The idea behind this unique feature is to ensure India's federal character and unitary spirit. This design is in tandem with the philosophy of the Constitution. While the express use of the word 'Union' makes the Centre strong enough to protect the unity and integrity of the nation, the federal character is created to equitably distribute the resources establishing India as a welfare state. This is the reason that India's federal character has been included in the Basic Structure of the Constitution. Without a federal design, India's union would lose its existence. Hence, the Rajya Sabha has been made a permanent House in Article 83 (1) which writes that it shall not be subject to dissolution. The States' representation must always be there at the Union level to maintain and sustain India's unitary federation. Thus, it is imperative that the statehood of Jammu and Kashmir be restored to protect the sanctity of federation.

#### **What next?**

To recall, on December 11, 2023, the Supreme Court upheld the abrogation of Articles 370 and 35 A, and also directed the Union Government to restore the statehood of Jammu and Kashmir and hold Legislative Assembly elections. Elections for the 90-member Assembly were held in October 2024, but there has not been any hint so far from the Government to restore the statehood as asked by the Court.

Critics may point out that restoration of statehood would definitely empower the elected government in Jammu and Kashmir and that the powers of the Lieutenant Governor would be curtailed affecting the present position of the Union over the Union Territory of Jammu and Kashmir. If this is to be agreed, it would be inconsistent with the constitutional design of India and would definitely erode its federal features.



## SHOULD RESERVATIONS EXCEED THE 50% CAP?

### The story so far:

The leader of the opposition in Bihar, Tejashwi Yadav, has declared that if voted to power, their alliance would increase reservation to 85%. In another development, the Supreme Court has issued notice to the Union government on a petition demanding the introduction of a 'system' similar to the 'creamy layer' for reservations among the Scheduled Castes (SC) and Scheduled Tribes (ST)

### What are constitutional provisions?

Articles 15 and 16 guarantee equality to all citizens in any action by the state (including admissions to educational institutions) and public employment respectively. In order to achieve social justice, these Articles also enable the state to make special provisions for the advancement of socially and educationally backward classes or Other Backward Classes (OBCs), SCs and STs. A brief summary of important developments with respect to reservations at the central level is provided in the Table. The reservation in the Centre at present stands as follows — OBCs (27%), SCs (15%), STs (7.5%) and for the Economically Weaker Section (EWS), 10%, resulting in a total reservation of 59.5%. The reservation percentages vary from State to State according to their demographic profile and policies.

### What have courts ruled?

The issue arises due to two ostensibly competing aspects of equality — formal and substantive. The Supreme Court in *Balaji versus State of Mysore* (1962) noted that reservations under Articles 15 and 16 for backward classes should be 'within reasonable limits' and should be adjusted with the interests of the community as a whole. The court further ruled that such special provisions for reservation should not exceed 50%. This is seen as an endorsement of formal equality where reservations are seen as an exception to equality of opportunity and hence cannot exceed 50%.

Substantive equality on the other hand is based on the belief that formal equality is not sufficient to redress the difference between groups that have enjoyed privileges in the past and groups that have been historically underprivileged and underrepresented. A seven-judge Bench in *State of Kerala versus N. M. Thomas* (1975) have broached the aspect of substantive equality. The court in this case opined that reservation for backward classes is not an exception to equality of opportunity but is an assertion and continuation of the same. However, since the 50% ceiling was not a question before the court, it did not give a binding judgment on this aspect in the case.

In the *Indra Sawhney* case (1992), a nine-judge Bench upheld the 27% reservation for OBCs. It opined that caste is a determinant of class in the Indian context. Further, in order to uphold the equality of opportunity, it reaffirmed the cap of 50% for reservation as held in the *Balaji* case, unless there are exceptional circumstances. The court also provided for the exclusion of a creamy layer within OBCs. In the *Janhit Abhiyan* case (2022), the court by a majority of 3:2 upheld the constitutional validity of the EWS reservation. It held that economic criteria could be a basis for reservation and opined that the 50% limit set in the *Indra Sawhney* case was meant for backward classes while the EWS reservation of 10% is for a different category among unreserved communities.



### **What are the competing arguments?**

Dr. B. R. Ambedkar in his Constituent Assembly speech in November 1948 justified the need to have reservations for backward communities that have been left out in the past. He also opined that reservations should be confined to a minority in order to uphold the guaranteed right of 'equality of opportunity.'

However, there has been a growing demand for increasing the reservation percentage beyond the judicial cap of 50% to reflect the proportion of backward classes in the population. The demand for a caste census has been strong in order to have actual data about this proportion rather than mere estimates. It must also be noted that as per various government replies in Parliament, 40-50% of seats reserved for OBCs, SCs and STs in the Central government remain unfilled.

Another contentious issue relates to the concentration of reservation benefits. The Rohini Commission, set up for providing recommendations on the sub-categorisation among OBC castes, has estimated that 97% of reserved jobs and seats in educational institutions have been garnered by just around 25% of the OBC castes/sub-castes at the central level. Close to 1,000 of around 2,600 communities under the OBC category have had zero representation in jobs and educational institutes.

A similar issue of concentration of reservation benefits persist in SC and ST categories as well. There is no exclusion of 'creamy layer' for these communities. In State of Punjab versus Davinder Singh (2024), four judges of a seven-judge Bench impressed upon the Central government the need to frame suitable policies for the exclusion of 'creamy layer' in SC and ST reservations. However, the Central government in a cabinet meeting in August 2024 reaffirmed that the 'creamy layer' does not apply to reservations for SCs and STs.

Critiques who are against the extension of a 'creamy layer' to SCs and STs argue that the vacancies for these communities are anyway not fully filled. Therefore, the question of a 'creamy layer' within such communities usurping the opportunities of even more marginalised castes does not arise. It is also likely that the exclusion of a 'creamy layer' based on any criteria will result in an even more increased backlog of vacancies. There is also a fear that such backlog vacancies may be converted in the long run to unreserved seats thereby depriving the SCs and STs of their rightful share of opportunities.

### **What can be the way forward?**

Right to equality of opportunity is a fundamental right and an increase in reservation up to 85% may be seen as violating such right. Nevertheless, substantive equality through affirmative action is required to uplift the underprivileged. Based on empirical data of the ensuing Census in 2027, which will also enumerate backward castes, there must be wide ranging discussions with all stakeholders to arrive at a suitable level of reservation. Equally important is to implement sub-categorisation among the OBCs as per the Rohini Commission report based on Census data. With respect to SCs and STs, as demanded in the plea before the Supreme Court, a 'two-tier' reservation system may be considered. Under such a scheme, priority would be given to more marginalised sections before extending it to those who are relatively well-off within those communities. These measures would ensure that benefits of reservation reach the more marginalised among the underprivileged in successive generations.

It must also be borne in mind that considering the opportunities available in the public sector and the young population of our country, any scheme of reservation would not meet the aspirations



of large sections of the society. There must be sincere efforts to provide suitable skill development mechanisms that would enable our youth to be gainfully employed.

## RTE AND MINORITY SCHOOLS

The Supreme Court on Monday cast doubt on a Constitution Bench judgment from a decade ago that exempted minority educational institutions from the provisions of the Right of Children to Free and Compulsory Education Act, 2009 (RTE Act).

— A two-judge Bench of Justices Dipankar Datta and Manmohan, while deciding on whether the Teacher Eligibility Test (TET) was mandatory for minority schools, held that the ruling in *Pramati Educational and Cultural Trust v Union of India* (2014) requires reconsideration by a larger Bench of the SC.

— The court observed that by taking minority schools out of the ambit of the RTE Act, the *Pramati* judgment may have jeopardised the fundamental right to quality education for children studying in them.

— The two-judge Bench ruled on a batch of appeals on whether

1. TET could be made mandatory for teachers in minority schools, and
2. in-service teachers in non-minority schools who were appointed before the RTE Act came into force, must pass TET to be eligible for promotion or continue in service.

— The court referred the issue of the applicability of the RTE Act to minority schools to a larger Bench, and passed a nuanced order for in-service teachers of non-minority schools.

— The court pointed to a critical conflict created by the sweeping exemption: While Article 30(1) of the Constitution protects the right of minority groups to establish and administer their institutions, Article 21A guarantees every child a fundamental right to education.

— Therefore, the Bench reasoned, exempting minority schools from the Act denies children studying in them the statutory benefits and protections that flow from the fundamental right under Article 21A.

— The Bench called for a harmonious interpretation where the rights under Article 21A and Article 30(1) “can and must co-exist mutually” rather than one being treated as an “unqualified trump card” over the other.

— In the *Pramati* case, the five-judge Constitution Bench was deciding the validity of The Constitution (86th Amendment) Act, 2002, which introduced Article 21A, and The Constitution (93rd Amendment) Act, 2005, which introduced Article 15(5) in the Constitution.

— *Pramati* upheld the validity of both amendments, but ruled that the RTE Act was unconstitutional “insofar as it applies to minority schools, aided or unaided, covered under clause (1) of Article 30...”.

— The court reasoned that the unique character of minority institutions must be protected. It feared that forcing these institutions to comply with the RTE Act would lead to an “abrogation” of their fundamental right under Article 30(1) to “establish and administer educational institutions of their choice”.



**Do You Know:**

— TET is the minimum qualification for appointment as teacher for Classes 1 to 8. The RTE Act guarantees free elementary education for children of ages 6-14. Government schools are required to provide free education to all enrolled children; aided schools must provide free seats proportionate to the aid they receive.

— Private unaided schools are required to reserve 25% of entry-level seats for children from disadvantaged groups, reimbursed by the state (Section 12(1)(c)).

The Act sets minimum standards of pupil-teacher ratios, trained teachers, infrastructure, and libraries, bans corporal punishment and capitation fees, and places an obligation on all schools to contribute to universal education.

— The two-judge Bench cited a study by the National Commission for Protection of Child Rights, which found that only 8.76% students in minority schools were from disadvantaged backgrounds, and that 62.5% of students belonged to non-minority communities.

— “This is indicative of many institutions labelled as ‘minority’ not serving their communities exclusively, but continuing to enjoy exemption from inclusionary mandates,” the Bench said.

#### ANOTHER CHANCE

The Supreme Court of India’s September 1 order on Bihar’s Special Intensive Revision (SIR) exercise offers a crucial lifeline to voters who found themselves wrongfully excluded from the draft electoral rolls. The Court’s ruling and the Election Commission of India’s (ECI) clarification that claims and objections can continue to be filed even after the deadline, represent a welcome move in an exercise that has raised questions about transparency and fairness. The ECI has confirmed that applications submitted after September 1 will be considered after the electoral roll is finalised, with the process continuing until the last date for filing of nominations. This ensures that inclusions and exclusions can be integrated into the final roll, providing excluded voters with a meaningful opportunity for redress through their Aadhaar card. However, the ECI’s numbers raise a curious question. While over 15 lakh new voters registered using Form 6, only around 33,000 claims were filed for re-inclusion of the approximately 65 lakh excluded names. This large difference becomes even more concerning when one considers that both categories use Form 6, potentially leading to conflation in the data presented to the Court. This data confusion feeds into a broader dispute between the ECI and political parties. While the ECI claims, using its daily data reports, that parties failed to assist excluded voters, parties contend that they did raise claims, but these were not properly processed by Block Level Officers.

Recognising these challenges, the Court has wisely directed that the Bihar State Legal Services Authority use para-legal volunteers to assist voters and political parties. The Court’s intervention appears to reflect concerns that mirror data-driven investigations, including by The Hindu, which have identified unusual patterns in the exclusion lists, pointing to anomalies. Ground reports further validate these findings, underscoring the need for robust corrective measures. The onus is on political parties to rise above narrow self-interest and actively assist genuinely excluded voters. The democratic process demands such civic responsibility from all stakeholders. For the next steps, the ECI must recognise Aadhaar as a valid standalone document to prevent unfair exclusions among the 99.5% of those in the draft roll who have already submitted documentation and the rest. Given that Aadhaar serves as sufficient proof for the excluded to file claims, it should



logically suffice for those already on the draft roll. The Bihar SIR experience offers lessons for future electoral roll revisions. The ECI must abandon its technocratic, short deadline-driven approach in favour of intensive revisions spread over longer periods, allowing thorough door-to-door verification. A clean electoral roll cannot be achieved through hurried exercises that prioritise administrative convenience over voter rights.

#### HOW CAN FRIENDSHIP BE PROVED WITH DOCUMENTARY EVIDENCE FOR ORGAN DONATION, ASKS HC

Wondering how friendship can be proved through documentary evidence, the Madras High Court has set aside an order passed by an Authorisation Committee, constituted to regulate unrelated organ donations, refusing permission for kidney transplantation between two individuals who claimed to be family friends.

Justice N. Anand Venkatesh found that the committee had denied permission solely on the basis of the Erode Collector's report, which said that donor C. Ganesan of Erode and recipient V. Periasamy of Thanjavur had not produced documents to prove they were family friends.

"It is incomprehensible as to how family friends can establish their relationship through documents. Emotion plays a part in a relationship involving friends, and it is not determined through documentation. Hence, the basis on which the report has been given by the Collector lacks sound reasoning," he wrote.

#### What the rules say

The judge pointed out that the Transplantation of Human Organs and Tissues Act of 1994 does not prohibit organ transplantation between non-near relatives. It only insists that such donation must be out of love and affection, without the involvement of any financial transaction between the donor and the recipient. The law also insists that no pressure/coercion should have been exerted upon the donor. The objective behind the enactment was to prevent the exploitation of the poor and the disadvantaged, and to ensure that money does not become the only criterion for transplantation of human organs.

"The tricky question that is involved is as to who must establish that there is no commercial dealing in a case of the donor and the donee not being near relatives," Justice Venkatesh said, and added that the donor and the recipient could only be expected to assert that there was no commercial dealing.

#### FOR CENSUS 2027, HOME MINISTRY SEEKS RS 14,619 CRORE BUDGET

The Registrar General of India (RGI) has sought a Rs 14,618.95-crore budget to conduct the Census 2027, which will be the first "Digital Census" and collect data on caste, The Indian Express has learnt.

Earlier this month, the RGI, which comes under the Union Ministry of Home Affairs (MHA), circulated a note seeking the approval of the Expenditure Finance Committee (EFC), a central body under the Ministry of Finance that appraises government schemes and projects. Once cleared by the EFC, the MHA will move a proposal for the approval of the Union Cabinet.

The amount sought is for both phases of the Census: the houselisting operation that will be conducted from April to September 2026, and population enumeration that is scheduled to begin



in February 2027 in the entire country, except for Ladakh, Jammu and Kashmir, Himachal Pradesh, and Uttarakhand, where it will be conducted in September 2026. During houselisting, details on housing conditions, household amenities, and assets possessed by the households will be collected.

According to sources, the next Census will be the first digital one as data will be collected through dedicated mobile applications developed for the purpose. The option to self-enumerate will also be provided to the public and caste data will also be captured electronically, sources said. On April 30, the Cabinet Committee on Political Affairs (CCPA) had decided to include caste enumeration in the Census. It is learnt that the RGI is also developing a website, Census Monitoring & Monitoring System (CMMS), for the real-time monitoring and management of the entire exercise.

More than 35 lakh enumerators and supervisors will be deployed to conduct the Census, which is over 30% higher (27 lakh) than the functionaries deployed to conduct the Census in 2011.

The Centre had notified on June 16 its intention to conduct the Census 2027. This is the first time that the decennial Census has been delayed by six years. In December 2019, the Union Cabinet approved the proposal to conduct the Census in 2021 for Rs 8,754.23 crore and update the National Population Register (NPR) for Rs 3,941.35 crore. The Census 2021 was also planned in two phases — houselisting operations from April to September 2020 and population enumeration from February 9 to 28, 2021 — but could not be conducted following the outbreak of the Covid-19 pandemic.

The decennial population Census has been conducted since 1872 without a break. The Census 2027 will be the 16th decadal Census overall and the eighth since Independence. During the exercise, village, town and ward-level population data on various parameters are collected. This includes data on housing conditions, amenities and assets, demography, religion, Scheduled Castes and Scheduled Tribes, language, literacy and education, economic activity, migration, and fertility. As per the 2011 Census, the country's population was 1.21 billion as of March 1, 2011. It is projected to climb to 1.41 billion this year. With a projected population of 143.6 crore in 2027, the cost of Census will be approximately Rs 101.8 per person.

**WHO ARE PARTICULARLY VULNERABLE TRIBAL GROUPS, WHICH THE GOVT WANTS TO BE COUNTED SEPARATELY IN THE CENSUS?**

The Ministry of Tribal Affairs (MoTA) wrote to the Registrar General and Census Commissioner of India (RGI) last month, requesting them to consider enumerating particularly vulnerable tribal groups (PVTGs) separately in the upcoming Census.

— In its letter, the MoTA has asked the RGI to capture the number of PVTG households, individuals, and their distinctive demographic, cultural and socio-economic features. The ministry said that such information would help in the better implementation of targeted schemes for PVTGs, such as the Pradhan Mantri Janjati Adivasi Nyaya Maha Abhiyan (PM JANMAN).

— PVTGs are a sub-category of Scheduled Tribes (STs), which show either a declining or stagnant population, geographical isolation, use of pre-agrarian practices (such as hunting and gathering), economic backwardness, and relatively low literacy.

— This category was created based on the recommendations of the Dhebar Commission (1960-61) — led by former Member of Parliament U N Dhebar — which had investigated the various issues faced by STs, and in consultation with state governments. The Commission identified the



disparity in socio-economic and living conditions between different tribal groups, and said that some tribal groups were more vulnerable than others.

— Initially, 52 groups were identified as PVTGs (then known as Primitive Tribal Groups) during the Fifth Five-Year Plan (1974-1979), the MoTA told the Rajya Sabha in a written response to a query on March 19, 2025. In 2006, the Centre added 23 more tribal groups to PVTGs, taking the total to 75. PVTGs are currently spread across 18 states, and the Union Territory of Andaman and Nicobar Islands.

— The MoTA told Lok Sabha in December 2016 that out of 75 PVTGs in the country, 40 have been scheduled as 'single entry'. This means that they are explicitly listed in the notified list of STs under Article 342 of the Constitution.

— In November 2023, the government rolled out the Rs 24,104 crore PM JANMAN scheme with an aim to improve the socio-economic status, health, education, livelihoods and amenities for PVTGs in more than 200 districts.

— To implement the scheme, the MoTA, along with state governments, collected habitation level data in a survey to estimate the PVTG population. This exercise also involved the identification of infrastructure gaps in PVTG habitations.

— As per the survey, there were an estimated 47.5 lakh PVTGs across India. At 13.22 lakh, Madhya Pradesh had the highest estimated population of PVTGs, followed by Maharashtra with an estimated population of 6.7 lakh, and Andhra Pradesh had about 5.18 lakh PVTGs.

— Government officials said that having an exact number along with demographic data would plug major gaps in the implementation of government schemes, especially in health and education initiatives. It will also help in understanding if PVTG classification criteria are still relevant, according to officials.

**Do You Know:**

— PM JANMAN was launched by the Prime Minister on the occasion of Janjatiya Gaurav Divas on 15th November 2023 at Khunti, Jharkhand targeting 75 PVTGs communities. It aimed at providing PVTG households and habitations with basic facilities such as safe housing, clean drinking water and sanitation, improved access to education, health and nutrition, road and telecom connectivity, and sustainable livelihood opportunities.

— The responsibility of conducting the decennial Census rests with the Office of the Registrar General and Census Commissioner, India under the Ministry of Home Affairs, Government of India.

**ON CENTRE'S TABLE: TRANSFERRING V-P'S Z-PLUS COVER FROM DELHI POLICE TO CRPF**

After receiving fresh threat inputs and conducting a security assessment, the Centre is planning to hand over the Z-plus security cover for the Vice-President to the Central Reserve Police Force (CRPF) instead of Delhi Police, The Indian Express has learnt.

— According to protocol, the V-P gets Z-plus cover from the security division of Delhi Police, including three officers holding the rank of Assistant Police Commissioner as Personal Security Officers.



— It is the second-highest security category in the country after the Special Protection Group cover for the Prime Minister and immediate family members. In the Z-plus category, around 50 personnel work in shifts with enhanced arrangements for the residence and cavalcade.

— The security protocol for the President, Vice-President and Prime Minister is based on guidelines detailed in the respective “Blue Book” issued by the Union Home Ministry under the Special Protection Group Act.

— Last year, the Home Ministry had sanctioned a fresh battalion of specially trained personnel, withdrawn from Parliament duty, to be attached to the CRPF’s VIP security wing.

**Do You Know:**

— Protection is generally given to someone who holds a position of consequence either in the government or in civil society — hence the informal description “VIP security”.

— But the Centre is usually not keen to give protection to individuals — and therefore, a large number of even “important people” whose lives are deemed to be in danger, are provided security by state police forces based on assessments made by the state government.

— The level of security is decided by the Ministry of Home Affairs (MHA) in the case of the Centre, and by the state government in the case of states.

— The assessment is based on inputs received from intelligence agencies, which include the Intelligence Bureau and the Research and Analysis Wing at the level of the Centre, and the state intelligence department in the case of the state government.

— There are largely six types of security cover: X, Y, Y plus, Z, Z plus, and SPG (Special Protection Group). While the SPG is meant only for the PM and his immediate family, other protection categories can be provided to anyone about whom the Centre or state governments have inputs about a threat.

— X category security usually entails one gunman protecting the individual; Y has one gunman for mobile security and one (plus four on rotation) for static security; Y plus has two policemen (plus four on rotation) for mobile security, and one (plus four on rotation) for residence security; Z has six gunmen for mobile security, and two (plus eight) for residence security; and Z plus has 10 security personnel for mobile security and two (plus eight) for residence security.

— According to the SPG (Amendment) Act 2019, the SPG protects the prime minister and members of his immediate family residing with him at his official residence. It also provides security to former prime ministers and their immediate family members staying with them at the residence allotted for a period of five years from the date on which they cease to hold the office.

**KUKIS HAVE AGREED ON FREE MOVEMENT, SAYS GOVT AHEAD OF PM’S MANIPUR VISIT**

DAYS ahead of Prime Minister Narendra Modi’s likely visit to Manipur, the Centre on Thursday claimed that Kuki civil society groups had agreed to allow free movement in Manipur.

— The Centre also announced the signing of a new Suspension of Operations (SoO) agreement with Kuki militant groups, under which they would relocate their camps from near Meitei areas and agree to “the territorial integrity of Manipur”.



- The start of free movement between the Kuki and Meitei areas would be the most significant step towards normalcy in the state that has been in the grip of ethnic violence since May 2023.
- If the Kuki side agrees to free movement, Delhi could then push the Meiteis to replicate the gesture. Currently, the communities are unable to pass through each other's areas.
- “Buffer zones” refer to the areas between Meitei-inhabited and Kuki-Zo-dominant parts, which are heavily manned by security forces to keep the peace.
- On the SoO agreement, the statement said, “Side by side, a tripartite meeting among representatives of the MHA, government of Manipur, and Kuki National Organisation (KNO) and United People's Front (UPF) was also held at New Delhi today. The meeting concluded with the signing of a tripartite Suspension of Operations Agreement on re-negotiated terms and conditions (ground rules), to be effective from the day of signing of the agreement, for a period of one year.”
- According to the MHA, the revised ground rules in the agreement include respecting the territorial integrity of Manipur (some sections of the Kukis have been seeking a separate administrative zone) and working for a negotiated solution towards peace in Manipur.
- The MHA said the KNO and UPF had agreed to relocate seven designated camps away from areas vulnerable to conflict, to reduce the number of designated camps, to deposit their weapons at the nearest CRPF/BSF camps, and to submit their cadres to stringent physical verification to de-list foreign nationals, if any.
- Currently there are 14 SoO group camps in Manipur. While many are stationed deep in the hills, some are in the areas where the hills meet the Valley. Meitei groups have alleged that these camps have been used to launch attacks in the Valley, a charge denied by the Kukis.
- The United Naga Council (UNC) that wields significant influence in the Naga areas of the state has announced a “trade embargo” beginning September 8 over the raising of the India-Myanmar border fence and the suspension of the Free Movement Regime (FMR) agreement with Myanmar.
- The FMR, which allowed the free movement of people across the India-Myanmar border up to 16 km, has been a prickly issue for both Kukis and Nagas, along with the border fencing.
- Due to shared ethnicity and familial relations across the border, both tribal groups have opposed the scrapping of the FMR and the construction of the border fence, with Kukis even likening it to the Berlin Wall.
- However, Meiteis in the Valley have alleged that FMR and a non-fenced border led to illegal immigration and illicit drug trade. They have even blamed this for precipitating the ethnic strife that has torn the state in the past two years.

**Do You Know:**

- The border between India and Myanmar was demarcated by the British in 1826, without seeking the opinion of the people living in the region. The border effectively divided people of the same ethnicity and culture into two nations without their consent. The current India-Myanmar Border reflects the line the British drew.
- People in the region have strong ethnic and familial ties across the border. In Manipur's Moreh region, there are villages where some homes are in Myanmar. In Nagaland's Mon district, the



border actually passes through the house of the chief of Longwa village, splitting his home into two.

— Apart from facilitating people-to-people contact, the FMR was supposed to provide impetus to local trade and business. The region has a long history of trans-border commerce through customs and border haats. Given the low-income economy, such exchanges are vital for the sustenance of local livelihoods.

### PM'S PROPOSED VISIT TO MANIPUR MUST PAVE THE WAY FOR REVIVAL OF POLITICAL PROCESS

That Prime Minister Narendra Modi has not visited a state torn apart by ethnic violence, in which over 250 people have lost their lives and thousands have been displaced, for more than two years, has created a conspicuous absence. The Centre intervened in Manipur, albeit unsuccessfully, going on to impose President's Rule earlier this year, after removing N Biren Singh as chief minister. But the prime minister stayed away. It is welcome that this may now change, if belatedly, with reports suggesting that he will visit the northeastern state later this month following his trip to Assam and Mizoram.

The violence has taken a high toll and the state has also suffered from the Centre's apparent neglect since May 2023. In Parliament, too, the continuing crisis was not given its due attention during the Budget session in April: It was allotted barely 41 minutes, and that too in the dead of night, after 14 hours of debate and voting on the Waqf Bill. It is in this context that people on both sides of the divide in the state express a loss of faith in the institutions responsible for keeping the peace. Sections have arrogated to themselves the power to take up arms, leading to a vicious cycle that has made it harder to achieve a resolution that lasts. Now, the PM's proposed trip provides an opening to build on the current lull in the violence and to initiate fresh negotiations between the Centre and Kuki militant groups (under the Suspension of Operations agreement) aimed at the free movement of people and goods. Of course, there are deep structural problems that will not be solved overnight: Roughly 3,000 looted arms still unaccounted for; nearly 57,000 people residing in over 280 relief camps; the continued absence of a popular government.

The violence that erupted more than two years ago exposed fault lines that had been widening for years. President's Rule and the removal of an unpopular chief minister were necessary measures, but the Centre failed to build on them. It must be hoped that the Prime Minister's visit becomes a significant step towards rebuilding trust and restoring a political process that alone can lead the state back to normalcy. At the very least, it will send a message to the people of the besieged state that the nation acknowledges their crisis, and that the fact that it continues is a scar on its conscience.

### CANCELLATION OF JAVED AKHTAR EVENT SPARKS DEBATE ON FREE SPEECH AND SECULARISM

The recent cancellation of a cultural event organized by the West Bengal Urdu Academy, titled "Urdu in Hindi Cinema," featuring renowned lyricist and poet Javed Akhtar, has ignited a firestorm of debate in Kolkata and beyond. Scheduled from August 31 to September 3, 2025, the event was abruptly postponed just hours before its inauguration, citing "unavoidable circumstances." However, media reports and public discourse reveal that the decision followed protests from Islamic organizations, including Jamiat Ulema-e-Hind and the Wahyain Foundation, who objected



to Akhtar's participation due to his publicly stated atheism and perceived irreverence toward religious sentiments. This incident raises critical questions about the state of free speech, secularism, and the influence of religious groups in shaping cultural discourse in India.

The cancellation has drawn sharp criticism from civil rights groups, who argue that the West Bengal government succumbed to pressure from fundamentalist forces, undermining the constitutional commitment to secularism. The Association for Protection of Democratic Rights (APDR), a prominent human rights organization in Kolkata, condemned the decision as politically motivated, suggesting it was a calculated move to appease a specific voter base ahead of elections. Ranjit Sur, APDR's general secretary, emphasized that the government's capitulation reflects a broader failure to uphold secular values enshrined in the Constitution. This perspective frames the cancellation as a betrayal of democratic principles, prioritizing political expediency over the right to free expression.

On the other hand, those opposing Akhtar's participation, such as Jamiat Ulema-e-Hind, argue that the cancellation was necessary to preserve communal harmony. They claim Akhtar's past statements, which some interpret as mocking religious beliefs, could have sparked unrest. This argument hinges on the idea that public order takes precedence over individual expression, particularly in a culturally sensitive region like West Bengal. However, this stance raises concerns about the precedent it sets: allowing religious groups to dictate who can speak at public events risks stifling artistic and intellectual freedom.

The controversy also underscores a troubling conflation of Urdu culture with religious identity. Two UK-based Urdu organizations, Urdu Culture London and Anjuman Taraqqi Urdu UK, condemned the cancellation, arguing that silencing Akhtar—a celebrated figure in Urdu poetry and Hindi cinema—due to his personal beliefs is an affront to democratic values. They noted that equating Urdu with a specific religion is not only reductive but also dangerous, as it alienates diverse voices within the Urdu-speaking community. This perspective highlights the broader implications of the cancellation: it risks narrowing the cultural space for Urdu, a language that has historically bridged religious and regional divides in India.

The cancellation of Javed Akhtar's event is a stark reminder of the fragile balance between free speech and communal harmony in India. While the state has a responsibility to maintain public order, ceding to pressure from any group—religious or otherwise—sets a dangerous precedent for cultural and intellectual discourse. The incident calls for a robust defence of secularism, where diverse voices, including those of dissenters like Akhtar, can coexist without fear of censorship. As Kolkata, often hailed as India's cultural capital, grapples with this controversy, it must confront the challenge of upholding its legacy as a beacon of pluralism and free thought. The path forward lies in fostering dialogue that respects both individual expression and collective sensitivities, ensuring that art and culture remain spaces of creativity rather than conflict.

#### TO REMEDY GENDER IMBALANCE IN IITS, ENCOURAGE GIRLS TO ENGAGE WITH STEM EARLY IN THEIR ACADEMIC JOURNEY

In 2018, when the Indian Institutes of Technology (IITs) introduced a supernumerary quota for women in undergraduate engineering courses — allocating extra seats instead of carving them out from existing numbers — it was a necessary course correction to remedy decades of gender imbalance, especially across some of the older centres. The policy worked as intended, pushing up female enrolment between 19 and 21 per cent across campuses. But, according to Joint Implementation Committee data shared by the JEE Advanced examination organising institutes,

4<sup>TH</sup> FLOOR SHATABDI TOWER, SAKCHI, JAMSHEDPUR



despite the absolute numbers of women admitted having gone up due to the quota — from 16,053 seats in 2020 to 18,168 in 2025 — the proportion of women students has flattened at around 20 per cent of total admissions. Simply put, the policy has succeeded in halting the decline, but it has not moved the needle far enough towards greater inclusivity.

Behind these statistics lies a more complicated truth: Access does not automatically translate into belonging. The IITs, to their credit, recognise this. To stop the proverbial glass ceiling from capping ambitions, campuses have been moving towards structural and cultural change — better hostels, safe and equitable recreational spaces, improved washroom facilities, access to AI-driven mental health tools, peer-support groups, stress-management workshops, and even institutional innovations such as IIT Kharagpur’s creation of the post of a dean of well-being, focused especially on student care, and to tackle obstacles female students face in environments long shaped by a male-majority ethos.

Yet, this is merely the groundwork. The next step must be about changing the culture that shapes female students even before they arrive at IITs. That means reforming school pedagogy to challenge gendered assumptions about aptitude; hosting workshops that address unconscious bias; creating curricula that foreground the achievements of women scientists, and encouraging girls who tinker, question and solve at every step of their academic journey. Government initiatives such as the Vigyan Jyoti programme and the CBSE’s UDAAN scheme, which provide financial assistance, mentoring and exposure to IITs, IISERs, and CSIR labs for girls in Classes IX–XII, are important correctives, but their impact is still unevenly felt. Despite the parity achieved in certain STEM fields such as medicine, where female students have begun to outnumber men, barriers to aspiration continue to surface persistently, funnelling women away from technical fields. And yet, many of India’s most ambitious scientific enterprises, including ISRO’s Mars Orbiter Mission and Chandrayaan-2, are now helmed by women, offering proof that the glass ceiling is not immutable. And that change is possible once women learn to see themselves as part of this continuum, when they can walk into institutions like the IITs knowing they belong, not as outliers rewriting the rules, but as rightful heirs to a legacy that includes them unselfconsciously.

## HOW DID KERALA PULL OFF DIGITAL LITERACY FEAT?

### The story so far:

On August 21, Kerala Chief Minister Pinarayi Vijayan declared Kerala as the first fully digitally literate State in India, marking the completion of the first phase of the ‘Digi Kerala’ digital literacy programme, a grass-root level intervention across all local self-government bodies with an aim to bridge the digital divide. According to the Local Self Government Department, a total of 21.87 lakh people who were identified as “digitally illiterate” in a ground-level survey had successfully completed the training programme as well as cleared the evaluation.

### What did they learn to do?

The trainees, who were not previously acquainted with digital devices, were taught to make voice calls as well as video calls using smartphones, to use WhatsApp and other social media platforms. Those who were not too old were also taught to access government services and to carry out digital transactions.



### **What led Kerala to take up the programme?**

This is a classic case of bottom up, rather than top down, flow of government programme ideas. The idea originated from the Pullampara panchayat in Thiruvananthapuram in 2021, when some government officials native to Pullampara noticed long queues regularly in front of one of the few banks in the panchayat. Quite a few of those in the queue were daily-wage or MGNREGS labourers who had travelled from the interiors just to check their account balance. The travails of those who had to sacrifice their daily wages for even checking their account balance made the government and panchayat officials think about teaching them to use the basic digital technology required in daily life.

The panchayat launched the 'Digi Pullampara' project, under which a survey was carried out across all wards to identify those who are digitally illiterate. Out of 3,917 people thus identified, training was provided to 3,300 as the rest were bedridden. The core team designed 15 activities in three modules for training.

Students from the National Service Scheme (NSS) units of engineering colleges and schools in the region signed up as volunteers to teach, along with Kudumbashree volunteers, SC/ST promoters, and library council members. MGNREGS worksites and Kudumbashree neighbourhood groups where people come together in considerable numbers became classrooms. Training was also done by volunteers visiting households. After the training, a different set of volunteers conducted an evaluation of each trainee, with the requirement that they had to complete at least six of the 15 tasks to pass. In Pullampara, 96.18% of the trainees cleared the evaluation. Retraining was provided for those who failed. At an event in September 2022, in which the Chief Minister declared Pullampara as Kerala's first fully digitally literate panchayat, it was also announced that the programme will be expanded State-wide.

### **How did the government scale up the Pullampara model across the State?**

The government brought the core team from Pullampara to the Kerala Institute of Local Administration to train a group of master trainers, who later trained 2.57 lakh volunteers from across the State. The surveying and training process was thus scaled up without major tweaks and was implemented in a manner similar to the Total Literacy campaign of the late 1980s. In the survey, 1.51 crore people from 83.45 lakh households participated, out of which 21.88 lakh were identified as digitally illiterate. At the State level, the third-party evaluation was carried out by the Economics and Statistics Department, in which 21.87 lakh people passed. In panchayats where over 10% trainees failed the evaluation, re-training was conducted. To questions on whether the State-wide survey has truly covered everyone, the officials argue that local level Kudumbashree workers who accompany the volunteers for the survey helped them avoid the houses in which the residents are already digitally savvy.

As per the National Digital Literacy Mission guidelines for digital literacy, training needs to be provided only for those up to 60 years of age. But the Digi Kerala programme includes people of all ages, even those above the age of 100. As many as 15,221 of the trainees were above the age of 90, while 7.77 lakh people were between the ages of 60 and 75 and 1.35 lakh between the ages of 76 and 90. Over 13 lakh women, eight lakh men and 1,644 transgender persons completed the programme successfully, as per the data.



### What is the road ahead for the Digi Kerala project?

At the Digi Kerala declaration, the Chief Minister also announced the Digi Kerala 2.0 project, under which awareness classes on cyber fraud, lessons to identify and reject fake news and intensive training to access government services will be held. At the national level, digital literacy is focused on computer literacy, but the Pullampara panchayat as well as the State government shifted the focus to the use of smartphones to navigate daily life. The State government sees it as part of a larger project, which also involves its Kerala Fibre Optic Network (KFON) project aimed at ensuring universal Internet access and narrowing the digital divide by providing Internet free of cost to below the poverty line (BPL) families (14,000 BPL families have been connected till now, in addition to 74,203 commercial home connections) and the K-SMART project to make available all services of local self-government bodies digitally over a uniform platform.

### ADIVASI LANGUAGES TRANSLATION APP TO BE LAUNCHED TOMORROW

The beta version of Aadi Vaani, a translation model based on artificial intelligence for Adivasi languages, will be released on Monday, officials said.

The application will be tested by the Tribal Affairs Ministry as part of the Adi Karmayogi initiative for capacity-building in tribal districts across India.

Under development by the Ministry for a little over a year now, the app will be launched with capabilities to translate Bhili (Bhil language), Mundari (Munda), Gondi (Gond), Santali (Santal), Kui (Kandha), and Garo (Garo), officials said. It will help translate speech and text in Hindi and English to these languages and vice versa.

Officials said the Ministry had been building a database of sentences in each of these languages with the help of experts. Each language had a database of over one lakh sentences.

Resource persons from tribal research institutes across the country, in collaboration with the Indian Institute of Technology, Delhi, the Birla Institute of Technology and Science, Pilani, and the Indian Institutes of Information Technology in Hyderabad and Naya Raipur, have developed the app.

The database has been built by identifying experts who read, speak, and write these languages. They include school teachers, professors, researchers, and community leaders from the regions where these languages are spoken.

Among the six languages, Bhili (or Bhilodi) is the most commonly spoken, according to the 2011 Census, which recorded over 1.04 crore speakers of it in India, most of them in Rajasthan, Madhya Pradesh, Maharashtra, and Gujarat.

This is followed by Santali, which is spoken by about 73.68 lakh people mostly in Jharkhand, West Bengal, Odisha, Bihar, and Assam; Gondi, spoken by 29.84 lakh largely in Chhattisgarh, Madhya Pradesh, Andhra Pradesh, and Maharashtra; and Mundari by about 11.28 lakh concentrated in Jharkhand and Odisha. Kui is spoken by around 9.41 lakh mostly in Odisha; and Garo by about 11.45 lakh people mostly in Meghalaya and Assam.

Ministry officials said that to begin with, the app had used publicly available content to train the model. Content included Adivasi folklore and traditional songs and speeches of Prime Minister Narendra Modi.



Senior officials in the Ministry said the Adi Karmayogi initiative would be the ideal testing ground for the app. “Through the wide use during the workshops and training exercises part of Adi Karmayogi, the corpus of each language will increase and the large language model’s performance will improve,” an official said.

The beta version will be made available on Google’s Play Store and Apple’s App Store. “The nature of LLMs is such that it will only get better with more use as more data is fed into it,” the official said.

Officials who worked on the app’s development said that a major challenge was to find an adequate number of experts as the task of recording audio and writing the language’s script for the app’s database was “time-consuming”.

A Ministry official said the application had been put through “international standards for testing accuracy of translations”, and that it had “more than met the requirements for accuracy” so far. The government intended to use the app widely during the Adi Karmayogi initiative, through which the Ministry is targeting capacity-building of about 20 lakh volunteers, village officials, and community leaders across one lakh tribal villages.

“There will also be a specific feedback mechanism on Adi Karmayogi portals to report on the usage of the Aadi Vaani app, and the app, of course, will also have one,” the official said.

**‘INDIA’S BIRTH RATE DOWN, FIRST DIP IN TFR IN 2 YEARS’**

India’s Crude Birth Rate (CBR), the number of children born per 1,000 people in the population in a year, has declined 0.7-points from 19.1 in 2022 to 18.4 in 2023. The country’s Total Fertility Rate (TFR) has fallen for the first time in two years to 1.9 in 2023, according to the latest Sample Registration Survey Statistical Report for 2023. In 2021 and 2022, India’s TFR remained constant at 2.0.

The report, released by the Office of the Registrar General of India this week, revealed that the highest CBR was in Bihar at 25.8, and the lowest was in Tamil Nadu at 12. Bihar reported the highest TFR (2.8) among the bigger States and Union Territories (UTs), and Delhi reported the lowest (1.2).

The report pointed out that 18 States and UTs had reported a TFR of below the replacement level TFR of 2.1. Replacement level TFR denotes the average number of children each woman needs to give birth for one generation to replace the other.

The RGI released the Civil Registration System (CRS), Sample Registration System (SRS), and Medical Certification of Cause of Death (MCCD) reports for 2021 after a four-year delay in May this year, and in June, the SRS, CRS, and MCCD data for 2022 were released. While the SRS for 2023 has been made public, the corresponding CRS and MCCD datasets are yet to appear on the Census website.

The SRS 2023 datasets showed that the proportion of the elderly in the country (people above 60) rose by 0.7 percentage points in a year to 9.7% of the population. Kerala has the highest proportion of elderly population at 15%. Assam (7.6%), Delhi (7.7%), and Jharkhand (7.6%) reported the lowest proportion of their respective populations to be above 60.



The TFR data, which denotes the average number of children expected to be born per woman during her entire span of reproductive period, further showed that all States reporting TFR that is higher than replacement level were in northern India – Bihar (2.8), Uttar Pradesh (2.6), Madhya Pradesh (2.4), Rajasthan (2.3), and Chhattisgarh (2.2). The States and UTs reporting the lowest TFR included Delhi (1.2), West Bengal (1.3), Tamil Nadu (1.3), and Maharashtra (1.4).

## WHAT IS CEREBO, THE BRAIN TOOL DEVELOPED INDIGENOUSLY?

### The story so far:

CEREBO is a novel hand-held, portable non-invasive brain injury diagnostic tool, developed through a collaboration between the Indian Council of Medical Research (ICMR), the Medical Device & Diagnostics Mission Secretariat (MDMS), AIIMS Bhopal, NIMHANS Bengaluru, and Bioscan Research. The device is to be used for Traumatic Brain Injuries (TBIs) and can detect intracranial bleeding and edema within a minute. It is safe for infants and pregnant women, and can be used by paramedic staff as well as unskilled personnel.

### Why is this device important?

Offered as an option in settings where advanced diagnostic tools like CT or MRI scans are inaccessible or delayed, CEREBO provides colour-coded, radiation-free, and cost-effective results. The device is designed for deployment in ambulances, trauma centres, rural clinics, and disaster response units and is aimed at enhancing early TBI detection and patient outcomes. According to the ICMR, CEREBO has undergone clinical validation, regulatory approvals, and feasibility studies, paving the way for global adoption in emergency and military healthcare systems.

ICMR added that multi-centre clinical performance evaluation and utility trials were conducted at leading trauma care and neurosurgical centres to generate prospective evidence on diagnostic accuracy, time-to-decision benefits, and integration feasibility within emergency care pathways. Post-market surveillance supported by ICMR-MDMS further confirmed its role in user adoption as a tool for effectively triaging patients for further neurological assessments. Health technology assessments also recommended the adoption of the device in tertiary care to accelerate CT scans, optimise triage, and reduce imaging costs.

### What is TBI?

TBIs are a significant public health challenge, particularly in emergency settings, rural areas, and underserved populations. Traditional diagnostic methods, such as the Glasgow Coma Scale (GCS), are prone to errors and subjective interpretations, while imaging techniques require specialised infrastructure, trained personnel, and are cost-intensive. It is to address this issue that CEREBO has been developed using advanced near-infrared spectroscopy technology powered by machine learning.

TBI is a condition caused by a sudden trauma or injury to the head, which disrupts normal brain function. This injury can range from mild (concussion) to severe, often resulting in long-term physical, cognitive, emotional, and behavioural impairments. The severity of TBI depends on factors such as the force of impact, the location of the injury, and the individual's overall health. According to an article titled, 'Epidemiology of traumatic brain injuries: Indian scenario', TBIs are a leading cause of morbidity, mortality, disability and socio-economic losses in India and other developing countries. It is estimated that nearly 1.5 to 2 million persons are injured and one



million succumb to death every year in India. Road traffic injuries are the leading cause (60%) of TBIs followed by falls (20%-25%) and violence (10%).

It is possible for a TBI to go undiagnosed initially, especially if symptoms are mild or if there are no visible signs of injury. A TBI can cause permanent brain damage in some cases, particularly if the injury is severe or if there are complications such as bleeding or swelling in the brain. Patients with mild TBIs (concussions) may only require monitoring and observation to ensure symptoms do not worsen. "Close monitoring of neurological status, vital signs, and cognitive function is important, especially in the first 24 to 48 hours after injury," it adds. Long-term consequences of TBI include cognitive impairments (such as memory problems), emotional and behavioural changes (such as depression, anxiety), physical disabilities, and increased risk of neurodegenerative diseases later in life, say experts.

## RECURRENT IRRITANT

Time is of the essence in science. The report that 75 women selected for the Department of Biotechnology's Biocare programme have received neither sanction letters nor salaries is reminiscent of an irksome and persistent malaise in India's research administration. Young researchers already contend with scant laboratory space, cumbersome university bureaucracies, labyrinthine grant applications, uneven mentorship and uncertain career prospects. Salaries and fellowships are modest in relation to living costs, which deters talented graduates from pursuing research. Even those determined to stay are often trapped in protracted postdoctoral or contractual roles without long-term security. In this milieu, a scheme such as Biocare promises an independent foothold while its failure to deliver on time magnifies the insecurity and discouragement. Opportunities for postdoctoral work and tenure-track openings abroad are also narrowing. Immigration regimes in the West have become tighter while competition for limited faculty posts has intensified. For Indian scientists, thus, the domestic research ecosystem is increasingly the arena in which their careers will unfold. Delays in disbursing fellowships and grants can derail entire careers.

India can no longer afford to treat such breakdowns as teething troubles. The country aspires to expand its global scientific standing, to convert research into innovation, and to train a generation of scientists to address pressing challenges in health, energy, agriculture and climate resilience. These ambitions are incompatible with a funding administration that falters at basic execution. The switch to the Treasury Single Account system, the stated reason for the Biocare delay, may strengthen transparency in the long run but there are several reasons for urgent administrative maturity right now. Foremost, science is time-sensitive: experiments must begin when facilities, collaborators and seasonal or biological conditions align. Delays break these cycles irreversibly. Second, when schemes that are progressive on paper fail to reach beneficiaries, the resulting credibility deficit will make it harder to attract domestic talent and international partnerships. Third, equity demands consistency. Women scientists, early-career fellows and those from under-represented backgrounds already contend with systemic barriers. Erratic access to funds affects them disproportionately. Scheme design must incorporate rather than externalise enforcement. Transparency must be implemented with contingencies so that beneficiaries do not become collateral damage in bureaucratic transitions. Accountability must be tightened at the level of Ministries and programme managers. Policymakers must recognise that a delay in accounting procedures for them is the interruption of livelihoods and careers for researchers.



## FIRST DATA OUT: MORE WOMEN GET CANCER THAN MEN, BUT LOWER SHARE IN DEATHS

Women accounted for a higher proportion of cancer cases in the country (51.1%) but a lower proportion of cancer deaths (45%). Oral cancer has overtaken lung cancer as the most common type of the disease among men. Cancer occurrence was among the highest in the northeastern states. These are some of the key findings of an analysis by researchers from premier institutions of data collected from 43 cancer registries across the country between 2015 and 2019 — a period when 7.08 lakh cancer cases and 2.06 lakh deaths were recorded.

— Based on the analysis, the researchers also estimated that a total of 15.6 lakh cancer cases and 8.74 lakh deaths occurred across the country in 2024.

— Population-based cancer registries collect data on new cancer cases, deaths and trends in selected geographical areas. India's registry currently covers 23 states and Union Territories, either partially or fully, and monitors trends in 10% to 18% of the population, with newer registries in regions such as Kashmir, Prayagraj and Thiruvananthapuram.

— The analysis was conducted by a group of national investigators from data collected by various hospitals, such as AIIMS-Delhi, Adyar Cancer Institute-Chennai, PD Hinduja-Mumbai, Tata Memorial Centre-Navi Mumbai, and Assam Medical College and Hospital. The data for 2020 was not included in the analysis due to the impact of Covid on health systems and the registry.

— The Government has several cancer care programmes in place and on the anvil, including, screening at the lowest levels through health and wellness centres, day care centres to be rolled out across all districts and treatment in tertiary centres under Ayushman Bharat. It has also been working on making newer cancer drugs cheaper by cutting related duties.

— Breast and cervical cancers, which together account for 40% of cases in women, are easier to detect early and have better outcomes. In contrast, Dr Abhishek Shankar, oncologist at the All India Institute of Medical Sciences (AIIMS), said that “commonly occurring cancers in men such as lung and gastric cancers are more difficult to treat.”

— There is much variation in cancer incidence across India. The highest lifetime risk of cancer was found to be in Mizoram, where it stood at 21.1% for men and 18.9% for women, higher than the 11% rate nationally.

— This data can help the Centre and states effectively plan their cancer care programs, from screening programs in primary health centres and specially organised camps to treatment of cancer in tertiary centres under the Centre's flagship Ayushman Bharat programme.

### India's Cancer Map

— Key findings of an analysis by researchers from premier institutions, based on data collected from 43 cancer registries across the country between 2015 and 2019 — a period when 7.08 lakh cancer cases and 2.06 lakh deaths were recorded — provided a broader understanding of India's Cancer Map.

— Women accounted for a higher proportion of the total cancer cases (51.1%) recorded in the registries but a lower proportion of deaths (45%).

— Oral cancer has overtaken lung cancer as the most common type of the disease among men.



— The incidence of cancers was the highest in the Northeast, with the highest occurrence of cervical cancer, lung cancer in women, and oral cancer in women all reported from states in this region.

— Breast and cervical cancers, which together account for 40% of cases in women, are easier to detect early and have better outcomes.

#### IN FRAMING NEW CLINICAL TRIAL RULES, GOVERNMENT MUST BALANCE PACE WITH PRUDENCE

In the past seven years, the government has taken several measures to streamline the drug approval process. The New Drugs and Clinical Trials (NDCT) Rules, notified in 2019, reduced timelines for ratifying therapies and clarified safety-related procedures. Last year, the Drugs Controller allowed novel products to enter the Indian market without local clinical trials if they had been approved in the US, UK, Australia, Japan, Canada, and the EU. The Union Ministry of Health and Family Welfare has now proposed amendments to the NDCT rules, including waiving the local clinical trial requirement for more formulations. Nimble regulation could fast-track research in cutting-edge medicine and enable doctors in the country to deploy novel therapies for TB, cancer, autoimmune disorders, and Alzheimer's. However, in its quest to spur innovation, the government would do well to be scrupulous about another fundamental requisite of the medical sciences — the safety of clinical trial participants and the welfare of patients.

A hub of out-of-patent therapies and affordable vaccines, India has been lagging in the development of new medicine molecules. Drug discovery is a long, expensive, and often complicated procedure. In the last 15 years, the Council for Scientific and Industrial Research has tried to bring together academia and business bodies to circumvent this challenge. However, regulatory processes continue to be the Achilles' heel of pharma innovation in the country. Despite the recent attempts at simplifying research requirements, the country continues to follow complex documentation, clinical trial, and inspection processes. As a Deloitte and ASSOCHAM report pointed out last year: "Several policy challenges continue to hinder the growth of India's pharmaceutical R&D sector, such as inadequate capacity for drug regulation, the need for advanced testing facilities, and the lack of a strong framework for monitoring quality compliance in manufacturing units." Developing synergies between laboratories in the country and outside its shores could help address some of these problems.

At the same time, medical policymakers should heed the caveats of abbreviating trials. Some of the new formulations that manipulate genetic material or modify immune cells carry long-term risks that are not yet fully understood. Even drugs that promise significant therapeutic advancements need careful scrutiny when used in a genetically diverse population. That's why a section of experts caution that skipping local trials could compromise safety. Other scientists reason that regulatory authorities should strengthen the monitoring of drugs exempt from local trials — like in the US and EU, for example. The government has invited public comments on the amendments to the NDCT rules. It must patiently parse criticisms and observations, and not act in haste.



## 10 MONTHS OF CYBERFRAUD REGISTRY: 13 LAKH TRANSACTIONS DECLINED, 5,000 CR SAVED

Ten months after launching the online 'suspect registry' system, the Centre has declined 13 lakh fraudulent transactions and saved Rs 5,111.80 crore.

— The registry, created based on the National Cybercrime Reporting Portal (NCRP) and developed by Indian Cyber Crime Coordination Centre (I4C), contains data of 1.4 million cybercriminals linked to financial fraud and various cyber-crimes, which has been shared with all banks.

— Launched by Union Home Minister Amit Shah on September 10 last year, it can be accessed by States/ UTs and central investigation and intelligence agencies.

— Data accessed by The Indian Express shows they have frozen around 3,54,884 accounts in which fraudulent money was received, 11,10,566 unique accounts identified, and Rs 5,111.80 crore saved after fraudulent transactions were rejected between September 2024 and August 1 this year.

— There are 61 banks/ financial institutions onboard the suspect registry system. The official said that among them, "35 private sector-Indian banks, 12 nationalised banks, six regional rural banks, six wallet/ merchant and one private sector bank-foreign bank".

— An analysis by agencies has revealed that this year, India is losing over Rs 1,000 crore monthly to cyber frauds. "In January, Rs 1,837 crore was cheated, Rs 1,573 crore in February, Rs 1,683 in March, Rs 1,314 crore in April, Rs 1,644 crore in May, Rs 1,584 crore in June and Rs 1,829 crore in July. Analysis also shows that more than 80% of cheating cases are recorded in the financial fraud category," the official said.

— An official said Rs 15.03 crore was refunded in January 2025, Rs 9.48 crore in February, Rs 9.87 crore in March, Rs 15.75 crore in April, Rs 14.60 in May, Rs 18.45 crore in June and Rs 11.73 crore in July.

### Do You Know:

— The Indian Cyber Crime Coordination Centre (I4C), established in 2018, is a department under the Ministry of Home Affairs (MHA) tasked with establishing a national-level coordination centre to address cybercrime-related issues.

— In September 2024, four I4C platforms were inaugurated — the Cyber Fraud Mitigation Centre (CFMC), the 'Samanvaya' platform, a Cyber Commandos programme and a Suspect Registry.

— Citizen Financial Cyber Fraud Reporting and Management System (CFCFRMS) has been developed by the I4C and is operated by respective State/UT which brings together Law Enforcement Agencies of States/UTS, Banks and Financial Intermediaries on a single platform to take immediate action on the complaints regarding financial cyber frauds received through helpline number 1930.



## DEPARTMENT OF POSTS, MAPMYINDIA PARTNER TO PROMOTE DIGIPIN

The Department of Posts (DOP), under the Ministry of Communications, on Friday inked a Memorandum of Understanding (MoU) with geospatial solutions provider MapmyIndia – Mapppls at Dak Bhawan. The agreement is aimed at utilising the company’s mapping platform and products to support DIGIPIN.

— Under the MOU, MapmyIndia will support the Know Your DIGIPIN application by providing base maps for integration, allowing visibility and accurate DIGIPIN generation, according to an official statement by the Department of Posts.

— DIGIPIN will also be incorporated into the Mapppls application to enhance searchability and navigation using the utility. Existing addresses in the MapmyIndia database will be allocated DIGIPINs in a boost for location-based services and to promote DIGIPIN adoption across platforms. Speaking on the occasion, Harpreet Singh, Member (Operations), DOP, said, “This partnership will significantly enhance DIGIPIN’s reach and accessibility. By integrating with MapmyIndia’s mapping platform, we are creating a standardised digital addressing system that will benefit millions of citizens and strengthen India’s digital infrastructure for efficient service delivery.”

### Do You Know:

— The Indian government has launched a new digital address system called DIGIPIN that aims to enable the precise identification of locations in the country.

— DIGIPIN is a unique ten-character alphanumeric code that can be generated for any property that is approximately 4 by 4 square meters on Indian land. This means that unique DIGIPINs can be generated for nearly all types of properties, including in urban locations and rural areas across different maritime zones.

— The Department of Posts has developed the underlying technology of DIGIPIN in collaboration with Indian Institute of Technology (IIT) Hyderabad and the National Remote Sensing Centre, which works under the aegis of the Indian Space Research Organisation (ISRO).

— Each DIGIPIN is encoded with the geographic coordinates of that property so it does not store any personal information. The DIGIPIN will not replace the traditional six-digit PIN system. Instead, it is intended to act as an extra layer of precision built on top of existing postal addresses.

## PLAN FOR THEATRE COMMANDS

Lingering differences of opinion within the defence services leadership over the structure of a theatre commands — which are among the major reforms that the Indian Armed Forces intend to implement — were in evidence at a tri-service seminar at the Army War College in Dr Ambedkar Nagar (Mhow), Madhya Pradesh, last week.

— Air Chief Marshal A P Singh cautioned against rushing the theaterisation plan, and stressed instead on creating a joint planning and coordination centre in Delhi under the Chiefs of Staff Committee to bolster ‘jointness’ among the three services.

— The theaterisation plan seeks to integrate the Army, Navy, Air Force, and their resources into specific ‘theatre’ commands, for deployment under a single, unified command structure. Each



command will be assigned a specific geographical region, combining the resources of the three services for operational roles.

— The Army and IAF currently have seven commands each, and the Navy has three. In addition, there are two tri-service commands — the Andaman and Nicobar Command and the Strategic Forces Command (SFC), which manages India’s nuclear arsenal.

— There is also the Headquarters Integrated Defence Staff (HQIDS), which was created after the Kargil conflict to fulfil the need for an institutional framework for higher management of defence.

— Taking a cue from other advanced militaries, the defence establishment believes that theatre commands will ensure integration among the three services, paving the way for them to fight future wars jointly, instead of individually without adequate coordination.

— Modern wars, which are expected to become increasingly multi-domain in nature, call for better coordination among land, sea, and air assets, as well as newer platforms such as UAVs and high-precision strike weapons, and domains like cyber and space.

— In the event of a future conflict involving drone and high-precision missile attacks combined with cyber attacks and land wars, the services would benefit by coordinating their planning and integrating their assets under a single command and control structure.

— Gen Rawat was killed in a helicopter crash in December 2021. In view of the IAF’s objections to the initial plan, Gen Rawat’s successor, Gen Anil Chauhan, asked the services to look afresh at the proposed reform.

— The new plan proposed adversary-based joint theatre commands instead of four defined theatre commands. This would involve carving out from the 17 service-specific military commands operating under the three services, integrated theatre commands for the northern and eastern borders with China, another for the western borders with Pakistan, and a third maritime command to tackle threats in the maritime domain.

— The creation of theatre commands entails dismantling existing structures of the service-specific commands under the three services, which have been functioning for more than seven decades.

— The IAF has expressed reservations, primarily on the ground that it would further divide the scarce combat assets of the Air Force — even as it has maintained that it supports jointness and integration of the three services.

**Do You Know:**

— In his Independence Day speech in 2019, Prime Minister Narendra Modi announced the new post of Chief of Defence Staff, saying the country’s entire military must work together, without a fragmentation of its prowess. This paved the way for discussions on theatre commands and their possible structure.

— That December, the Union Cabinet approved the creation of the post of CDS in the rank of a four-star general. In a statement, the government said the CDS would head the Department of Military Affairs (DMA) — to be created under the Defence Ministry — as its secretary. The DMA was mandated to:



- \* Promote jointness in procurement, training, and staffing for the services through joint planning and integration of their requirements;
- \* Facilitate the restructuring of military commands for optimal utilisation of resources by bringing about jointness in operations, including through the establishment of joint/ theatre commands.

#### ALL OF INDIA BREATHES BAD AIR, AQLI 2025 REPORT SAYS

While north Indian cities such as Delhi, Ghaziabad, and Kanpur are notorious for their air pollution, almost everyone living in India breathes air dirtier than what the World Health Organisation (WHO) has deemed safe.

According to the Air Quality Life Index (AQLI) 2025 annual update, all of India lives in areas where the annual average particulate pollution level (PM<sub>2.5</sub>) exceeds the WHO annual average limit of 5 g/m<sup>3</sup>.

The country's northern plains, however, remain the greater offenders, exposing an estimated 544.4 million people to bad air.

The AQLI report is based on global pollution data from 2023. Atmospheric pollution levels rose planetwide in 2023 following two relatively quiescent years due to the COVID-19 pandemic.

The report was put together by the Energy Policy Institute at the University of Chicago. The air quality in India is also bad by its own standards, which are more lenient than those of the WHO. According to the report, 46% of India's people live in areas where the national annual PM<sub>2.5</sub> standard of 40 g/m<sup>3</sup> has been breached.

The report also said Delhi will experience the greatest benefit among India's cities by lowering particulate pollution to the WHO's recommendation, adding 8.2 years to life expectancy. Because the whole country currently breathes subpar air, even those in the cleanest areas could live 9.4 months more if their air is cleaned up, the report found.

The problem transcends borders, of course. Emissions from Bangladesh, India, Nepal, and Pakistan have together blanketed a big swath of South Asia with polluted air.

Bangladesh in particular has consistently been the most polluted country in the region for years. In 2023, the country's air had 12x greater PM<sub>2.5</sub> concentration than the WHO guidelines — and improving it could add 5.5 years on average to resident Bangladeshis' lives. The report estimated the potential gain to be highest in Gazipur, where residents could live 7.1 years longer.

China noted a consistent decrease in pollution over the last decade. China, however, has been somewhat of a notable exception: while the concentration of harmful particles in its air grew by 2.8% in 2023, the air quality has been improving for a decade.

This is not accidental. Even with the 2.8% increase in 2023, the particulate concentration was still 40.8% lower than what it was in 2014. Among other policies, the country has restricted the number of cars on the roads in large cities such as Beijing, Shanghai, and Guangzhou; cut its iron and steel-making capacity; banned new coal plants in specific regions; and replaced coal-based home heating solutions with gas or electric heaters, the AQLI report noted. Then again, a lot remains to be done. Even if China's air is cleaner than India's, the people of China are also exposed to more PM<sub>2.5</sub> levels than the WHO's threshold.



Worldwide, the global PM2.5 concentration in 2023 was 1.5% higher than in 2022 and almost 5x times over the WHO limit. Indeed, the report identified particulate pollution as the “greatest external threat to human life expectancy” in 2023.

### PUNJAB NEEDS IMMEDIATE RELIEF AND REHABILITATION. BUT FLOODS ALSO POSE A BIGGER CHALLENGE

Punjab is facing one of its worst floods in decades, with over three lakh acres under water, 29 lives lost, dams flowing above the danger mark, and rains showing no signs of abating. Until late August, the state was basking in a bountiful monsoon, buoyed by the promise of a rich paddy harvest. Then, almost overnight, came the deluge. The border belt of Majha, adjoining Pakistan, has been the worst hit. The swollen Ravi, which flows from the Himalaya into Punjab before winding its way into Pakistan, has ravaged hundreds of villages in the border districts. Such was the ferocity of the river that two floodgates of the Madhopur barrage built in the 19th century gave way, taking one life, with 40 others barely escaping death. Sutlej, Beas and Ghaggar too are in spate; dams receiving water from Himachal Pradesh have been overflowing. Last week, the Ranjit Sagar and Pong dams breached the danger level. Now, the Bhakra dam stands perilously close to spilling over.

The question is: Could this tragedy have been averted, especially when Punjab had faced floods in 2019 and 2023 as well? The annual flood-preparedness meeting, usually held in February, was delayed to June this year. In February, the ruling Aam Aadmi Party seemed much too preoccupied with the Delhi Assembly elections; few MLAs were even in the state. June brought the Ludhiana bypolls. Much of May was spent sparring with the Bhakra Beas Management Board (BBMB) and the Haryana government over releasing excess water to the neighbouring state. Punjab's irrigation minister has been pointing accusing fingers at the BBMB for failing to release water earlier. Experts point to chronic inefficiencies of the floods and irrigation department.

For now, the immediate priority is relief and rehabilitation. Civil society has stepped in, sending food and medicines. But a bigger challenge looms: Of compensation for farmers and the rebuilding of lives. Chief Minister Bhagwant Mann has written to Prime Minister Narendra Modi, asking for the release of Rs 60,000 crore, calling it “Punjab's funds withheld by the Centre” in this hour of crisis. Silence from the top brass in Delhi has only deepened resentments of those who point out that there hasn't been a message of solidarity from the highest echelons. A silver lining is villagers sending aid and Chief Minister Nayab Singh Saini promising support from neighbouring Haryana. It is high time the Union government, too, reaches out. Punjab's farmers, the backbone of the nation's food security, deserve more than token sympathy when fields are under water and futures are on the verge of being washed away.

#### Note:

— These rivers, and the alluvium they carry, makes Punjab one of the most fertile places on the planet. For millennia, agriculture has thrived on the floodplains. Today, Punjab, often hailed as the “food bowl” of India, produces nearly 20% of the country's wheat and 12% of its rice, despite making up only 1.5% of its landmass.

— This fertility, however, comes at a cost. Rainfall in Punjab and upstream catchment areas in Himachal Pradesh and Jammu & Kashmir (J&K) make Punjab's rivers swell up during the monsoon. While an elaborate system of dhussi bundhs (earthen embankments) form a first line of defence against flooding, heavy rain often overwhelms these.



— The Bhakra dam sits on the Sutlej in Himachal Pradesh's Bilaspur district, and the Pong dam sits on the Beas in Himachal's Kangra district. Both are operated by the Bhakra Beas Management Board (BBMB), a statutory body constituted under the Punjab Reorganisation Act, 1966.

— The Thein dam (officially the Ranjit Sagar dam) sits on the Ravi at the border of J&K and Punjab, and is operated by the Punjab State Power Corporation Ltd and the state's Irrigation Department.

— When excessive rainfall fills up the dams' reservoirs, water must be released to prevent overtopping, a potentially catastrophic situation when the water level in the reservoir exceeds the dam's crest.

— During heavy rainfall, even controlled releases can cause flooding downstream. This is what happened this year.

— Punjab, however, has long felt that the BBMB does not act in its interest. State officials say that the Board keeps the reservoir levels too high in July and August to ensure water for winter irrigation and power, not leaving much cushion for when sudden rain arrives in August and September. Moreover, officials say, the BBMB often does not provide timely warnings, with sudden releases often blindsiding state officials downstream.

— At the heart of Punjab's problems with the BBMB lies in its constitution. The state feels it has too little say in the Centre-controlled Board whose primary mandate is to provide irrigation and generate power, not flood-management.

— The Centre's decision to amend BBMB rules in 2022, which now allow officers from across India, not just Punjab and Haryana, to hold top posts in the Board, has only aggravated Punjab's concerns.

— Experts have long called for better management of dams. And not just the ones operated by the BBMB.

— Also important is the maintenance of dhussi bundhs. Union Agriculture Minister Shivraj Singh Chauhan, after visiting flood-hit districts in Punjab, on Friday blamed illegal mining for weakening these earthen embankments.

— Experts believe a combination of factors have led to repeated floods in Punjab.

— High dependence on rivers: Punjab's river system, including perennial rivers Sutlej, Beas, Ravi, and the rain-fed Ghaggar River and its tributaries, are prone to overflowing during heavy monsoon rain or water release from upstream areas.

— Climate change: Increased frequency of extreme rain events in recent decades.

— Poor drainage: The state's flat topography and encroachments on natural drains worsen waterlogging.

— Water release from dams: Sudden discharge from dams during peak monsoon aggravates flooding in downstream areas. Punjab has no crop insurance system, thus worsening the state's economic condition besides leaving farmers to bear the brunt of major losses.



## RAIN AND REPEAT

The heavy rains and flooding across Andhra Pradesh and Telangana this season underline how extreme weather interacts with governance. In 2024, Andhra Pradesh recorded 27% of its annual rainfall in two days; this August, Vizianagaram logged a 46% excess, with some parts reporting up to 90%. Consecutive years of extreme precipitation signal a shift in the monsoon's behaviour. Reservoir and barrage systems in river basins are designed to manage seasonal inflows but the timing and intensity of recent rain events matter. At one point this year, Srisailam was 94% full and Nagarjuna Sagar 96%, leaving little room for additional inflow. The crisis is really excess rainfall plus its concentration into short bursts when reservoirs are already nearly full. Last year, Budameru, a rivulet with a capacity of 7,000 cusecs, received 35,000 cusecs and flooded Vijayawada. The recurrence points to how minor tributaries and drainage channels, which are often neglected in policy, become debilitating choke points. While sheer volume explains part of the flooding, infrastructural weaknesses magnify the damage. At the Prakasam Barrage, one gate damaged last year remained unrepaired well into this season, hampering smooth water release. Along the Godavari, floodbanks near Bhadrachalam sank or collapsed in places, raising anxiety among residents on both sides of the border. In urban areas, partly desilted drains, encroached stormwater channels, and concretised surfaces have restricted water absorption. Overall, infrastructure exists but is not maintained or upgraded with urgency.

The disaster management apparatus in both States is mature and saved many lives. Yet, institutions remain less agile at reducing risk. Year after year, large sums are sanctioned for immediate relief (Telangana recently released ₹1 crore per district at short notice) but strengthening floodbanks and completing diversion channels remain unfinished. In 2024 and 2025, extreme rainfall arrived late in August and early September. Both times, the Krishna and Godavari systems were severely strained and Vijayawada was inundated. Both times, protests followed, highlighting incomplete Budameru works and opaque relief fund uptake. Extreme rainfall cannot be prevented but its consequences can be moderated by anticipating it. Reservoir management, for example, needs to incorporate real-time hydrological modelling so that water levels are drawn down before a deluge, creating flood cushions. Urban planning must prioritise drainage networks and reserve permeable land for water absorption, moving beyond cosmetic desilting drives. Flood banks and sluices require continuous, not episodic, maintenance, and their upkeep should be insulated from political cycles. Neither State is wrong to argue that extraordinary rains can overwhelm even robust systems, but both risk fatalism if they use this as an excuse to avoid reform.

## 'MINI-CLOUDBURSTS' ARE ON THE RISE, SAYS IMD CHIEF

There is no "increasing trend" in cloudbursts — 10 cm of rain in an hour or more over 20-30 square km — over India in recent years and they remain "impossible" to forecast. However, there has been an increase in "mini-cloudbursts" — 5 cm of rain per hour, Mrutyunjay Mohapatra, Director-General, India Meteorological Department (IMD), said at a press briefing on Sunday.

Rainfall in September — the last official monsoon month — is, as in the previous months, expected to be "above normal", or 9% more than the usual average of 16.7 cm, he said. Except the northeastern States and parts of "extreme" southern India, the rest of the country is expected to get above normal rainfall.



The three monsoon months so far have seen “above normal” rainfall, in line with what the IMD forecast in May. Rainfall during June 1 to August 31 was 6% above the 70 cm usual for the three months.

#### **Less rain in the east**

Northwest India — comprising Uttarakhand, most parts of Uttar Pradesh, Punjab, Haryana, Jammu, Kashmir, Rajasthan, Delhi — got 26% more rainfall than what is typical for the three months.

Central India and the southern peninsula saw 8.6% and 9.3% more rainfall than usual with only the eastern and northeastern India — which receives the most rain as a bloc during the monsoon — getting 17% less than normal.

August rainfall in northern India, at 26.5 cm, was the highest since 2001, said IMD data. Rainfall over the southern peninsula, at 25 cm, was the third highest since 2001. There were more than 700 instances of heavy rain (20 cm or more in a day) in August 2025, the second highest since 2021 behind the 800-plus in 2024.

The extremely active monsoon in northern India — that saw large-scale destruction of lives and property in Himachal Pradesh, Jammu and Uttarakhand — was due to a confluence of several western disturbances (storms that travel to India from the Mediterranean) and storms from the Bay of Bengal moving northwards leading to several episodes of intense rain, he said.

“This is likely to prevail during September too...since 1980 we have noticed an increasing trend in the rainfall India receives during September,” he told The Hindu.

### **IS THE GANGOTRI GLACIER LOSING SNOW EARLIER THAN USUAL?**

#### **The story so far:**

A recent study has reconstructed the long-term discharge flow of the Gangotri Glacier System (GGS), the source of the upper Ganga basin which contributes to the waters of the Bhagirathi river in the central Himalayas. In the wake of climate change, glaciologists the world over have been studying the impact of glacier melt.

#### **Why is the GGS significant?**

The snow and ice reserves of the Hindu Kush Himalaya (HKH) are critical sources of water to sustain major rivers like the Indus, Ganga, and Brahmaputra. Significant climatic changes, however, have been observed in recent decades in the region, altering the cryosphere and the hydrological cycle. This has meant a change in the dynamics of glacier-fed hydrological systems, accelerating glacial retreat and shifting seasonal discharge patterns. Modelling studies, or theoretical assessments of these changes, are a popular approach to assess these changes. Given their size, however, assessing river flow and delineating the contribution of snow melt and precipitation is challenging. It is easier to estimate this in relatively smaller systems such as the GGS and this is why it is a popular choice among hydrologists and climate scientists. The current study, ‘Hydrological Contributions of Snow and Glacier Melt from the Gangotri Glacier System and Their Climatic Controls Since 1980’, led by researchers at the Indian Institute of Technology, Indore, the Universities of Utah and Dayton in the U.S. and the Kathmandu-based International



Centre for Integrated Mountain Development, attempts to fill the gap. The study appears in the Journal of the Indian Society of Remote Sensing.

#### **What did the study find?**

The study reconstructed the long-term discharge trend of the GGS by combining a high-resolution glacio-hydrological model, called Spatial Processes in Hydrology (SPHY). This simulates terrestrial water balance processes, such as rainfall-runoff, evapotranspiration, and cryospheric processes. This is combined with the Indian Monsoon Data Assimilation and Analysis (IMDAA) dataset spanning 1980–2020. Their analysis finds that maximum GGS discharge occurs during the summer months, with a peak in July at 129 cubic metre per second. The mean annual GGS discharge was estimated as  $28 \pm 1.9$  m<sup>3</sup> /s, with the major contribution from snow melt (64%), followed by glacier melt (21%), rainfall-runoff (11%) and base flow (4%) over 1980–2020. A decadal discharge analysis, their study found, showed a shift in the discharge peak from August to July post-1990, which they attributed to decreased winter precipitation and enhanced melting in early summer.

The mean, decadal GGS discharge showed the highest volumetric increase of 7.8% from 1991–2000 to 2001–2010. While the mean annual temperature increased, no significant trend was observed in mean annual precipitation or glacier melt. Despite the warming, snow melt declined, mainly due to a decreasing trend in mean snow cover area, whereas rainfall-runoff and base flow increased over GGS during 1980–2020. Statistical analysis revealed that the mean annual discharge of GGS is mainly controlled by summer precipitation, followed by winter temperature.

#### **Which glaciers make up the GGS?**

The study area of the GGS comprises the glaciers Meru (7 km<sup>2</sup>), Raktavaran (30 km<sup>2</sup>), Chaturangi (75 km<sup>2</sup>) and the largest glacier Gangotri (140 km<sup>2</sup>). The GGS covers an area of 549 square km (km<sup>2</sup>) spanning an elevation range between 3,767 metres and 7,072 metres. About 48% of the GGS is glacierised. The GGS receives precipitation from the western disturbances during winter (October to April) and from the Indian summer monsoon during summer (May to September). The average seasonal rainfall (May to October) is around 260 mm, with an average mean temperature of 9.4°C for the period 2000–2003.

#### **What are the implications of the findings?**

Rainfall run-off and base flow have exhibited increasing trends on GGS, suggesting warming-induced hydrological changes. This year the summer monsoon has been particularly intense in north India with nearly 25% more rain than usual from June to August. There have been several instances of intense floods in Uttarakhand, Jammu and Himachal Pradesh often prompting State authorities to label them – without a scientific basis – as ‘cloudburst,’ despite the lack of appropriate instruments or satellite imagery to justify this. A cloudburst is when over 10 cm of rainfall is reported in an hour over an area less than 30 square km.

### **A NEW LEAF**

The Ministry of Environment, Forest and Climate Change has brought into effect a set of rules called the Environment Audit Rules, 2025, that allows the vital activity of environmental monitoring and auditing to go beyond the remit of State Pollution Control Boards. The rules will largely scrutinise whether industrial units are compliant with environmental regulation. The overall framework for monitoring and compliance within the existing environmental framework

**4<sup>TH</sup> FLOOR SHATABDI TOWER, SAKCHI, JAMSHEDPUR**

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is presently supported by the Central Pollution Control Board, the Regional Offices of the Environment Ministry, and the State Pollution Control Boards/Pollution Control Committees. They have, however, been facing significant constraints in terms of manpower, resources, capacity and infrastructure. “These limitations have hampered their ability to comprehensively monitor and enforce environmental compliance across the vast number of projects and industries operating nationwide,” said a press statement by the Environment Ministry. This scheme aims to bridge the manpower and infrastructure deficits faced by regulatory authorities, thereby strengthening the effective implementation of environmental compliance mechanisms.

Under the new rules, private agencies can get themselves accredited as auditors. Much like chartered accountants, environment auditors can get themselves licensed and be authorised to evaluate the compliance of projects with environmental laws and their adherence with best practices in the prevention, control and abatement of pollution. Environmental regulation has, in recent years, transcended policing and bookkeeping. Given that human-caused climate change is seen as a problem that nations must collectively fix, new dimensions to environmental regulations have emerged. Thus, audits undertaken by these agencies can also be used for compliance with ‘Green Credit Rules’, under which individuals and organisations can gain tradeable ‘credits’ for afforestation, sustainable water management and waste management among other activities. Beyond industrial units, nearly every company in India will have to account for its direct and indirect carbon emissions. This will entail fairly complex accounting practices, which are beyond what Pollution Control Board officials can handle. However, preparing for the future should not be at the expense of compromising core responsibilities. It is usually at the district, block and panchayat levels that the most flagrant environmental travesties abound, which escape notice usually because of the lack of trained staff. The new regime must seek to empower them too.

#### MORE EXEMPTIONS FOR MINERAL EXPLORATION DRILLING ON FOREST LAND

The Union environment ministry’s forest advisory committee (FAC) has approved requests to allow more bore holes to be drilled on forest land for mineral exploration activity without seeking clearance under the Van Sanrakshan Evam Samvardhan Adhiniyam, 1980, as per ministry documents.

— The ministry will now allow 62 to 80 bore holes of up to 6-inch diameter per 10 sq km, for survey and explorations under the exemption category, depending on the type of mineral deposits or ore explored. Bore holes are narrow, deep holes drilled into the earth to explore minerals, ores or oil and gas.

— The FAC’s decision comes on the back of relaxations sought by the Ministry of Coal and Ministry of Mines, as per minutes of FAC’s meeting. The policy decision was based on a report of the Indian Institute of Forest Management (IIFM), Bhopal, which assessed the issue and its impact on forest area.

— As per the existing guidelines under the forest conservation law, drilling of up to 25 bore holes per 10 sq km and 80 shot holes per sq km, along with felling of up to 100 trees in the said area was exempted from forest clearance.

— While granting the relaxation, the ministry directed to ensure that there should be minimum impact of the drilling and other associated activities on wildlife. It said that the survey and exploration activities, including drilling, shall be limited from 9 am to 5.30 pm to align with the



diurnal pattern of wildlife. It added that the bore holes should be plugged with cement immediately after completion of all bore hole related activities.

— IIFM, though, added that the noise created by the drilling rig can disturb the wildlife and force them to change their movement paths.

— The FAC also stated that the standard operating procedure for mineral exploration in forest areas is to be followed. The SoP stated that no drilling will be allowed within high-sensitivity areas to protect ecological hotspots.

— These included critical wildlife breeding and nesting areas, water sources, high-biodiversity forest patches, areas with endangered or endemic species, and culturally or religiously significant forest areas.

— The SoP stated that a reconnaissance is necessary prior to the drilling activity to identify critical habitats, only to avoid them. The environment ministry granted exemptions for exploratory drilling on forest land when the Forest Conservation Act, 1980 was amended in 2023.

**Do You Know:**

— Forests in India are not just trees but have been a lifeline for millions of people. They hold socio-economic and cultural significance and are one of the primary indicators of the country's ecological health. This is why maintaining 33% of the country's geographical area under forest cover has long been a key policy in India.

— However, according to the Indian State of Forest Report (ISFR), 2023, the total forest and tree cover of the country is 8,27,356.95 km<sup>2</sup>, which is around 24% of the geographical area of the country. While there has been a slight increase in the green cover as compared to the last ISFR, the report shows a decline in the eco-sensitive zones, mangroves, and natural forests.

— The legal framework on forest conservation in India has evolved from both pre-independence and post-independence laws. The Indian Forest Act of 1927 is the foundational legislation that classifies and regulates the use of forests without defining it. It enables/allows the government to prepare the record of forest land.

— It was enacted to strengthen the colonial power on the Indian forests, restricting the rights of tribal communities and ignoring the conservation aspect of forest governance. After independence, the subject of the forest was placed under the State List of the Constitution, which led to the over-exploitation of forests by the state and rapidly declining forest cover.

#### KERALA MAY AMEND WILDLIFE PROTECTION LAW

The Kerala government is considering an amendment to the Wildlife Protection Act, 1972 for addressing specific challenges faced by the State in human-wildlife conflict, Minister for Law P. Rajeeve said.

The amendment under consideration seeks to authorise the Chief Wildlife Warden “to permit any person, by following certain procedures, to kill, tranquillise or capture a wild animal if it attacks someone and causes serious injury or if such an animal is found in a public place,” Mr. Rajeeve said.



Mr. Rajeeve was addressing a conference organised by the Kerala State Legal Services Authority and the National Legal Services Authority on Saturday.

The decision to propose an amendment to a Central law is based on the legal advice that the State government is competent to propose such an amendment, Mr. Rajeeve said.

He told The Hindu that the government proposes to introduce the Bill, which is awaiting Cabinet nod, in the upcoming session of the State Assembly. Since the amendment concerns a Central law, the Bill, once passed by the Assembly, would also require the assent of the President, he said.

Article 254(2) of the Constitution allows a State legislature to pass a law on a subject on the Concurrent List.

“In the context of human-wildlife conflict, the State has struggled for years under the limitations of the Central law,” Mr. Rajeeve said, observing that human-wildlife conflict has reached a critical stage in Kerala, posing a serious threat to human welfare.

Observing that marginalised sections were the most affected due to this conflict, Mr. Rajeeve also drew attention to the resolution passed by the State Assembly in February 2024 urging the Centre to amend the Wildlife Protection Act for mitigating human-wildlife conflicts.

#### INDIA'S FIRST VULTURE CONSERVATION PORTAL LAUNCHED IN ASSAM

An Assam-based foundation working on vulture conservation has developed a portal - reportedly the first of its kind in India - to build a network of individuals engaged in saving the large scavenger birds.

A group of organisations led by We Foundation India launched the portal on Tuesday in collaboration with Gauhati University's Department of Zoology.

The event brought together conservationists, researchers, scientists, academicians, and students to discuss the status of vultures in India and the measures needed for their survival.

“We organised the event ahead of International Vulture Awareness Day, which is observed every year on the first Saturday of September to highlight the importance of vultures and the urgent need for their conservation,” said Nilutpal Mahanta of We Foundation India.

He said the focus of the portal was on disseminating information in local languages, beginning with Assamese, to ensure that people at the grassroots understood how vulture survival was linked to their lives and the local economy.

We Foundation's partners in The Vulture Network include the Assam Bird Monitoring Network, LASA Foundation, Suraksha Samitee, and individual conservationists and researchers.

#### GOVT TIES GREEN CREDITS TO CANOPY DENSITY, TO AWARD IT AFTER 5 YEARS

In a new set of rules, the Union Environment Ministry will now award green credits generated for tree plantation under the Green Credit Programme (GCP) only after five years, based on a minimum canopy density of 40 per cent and tree survival.

— Crucially, it said that the credit for tree plantation will be non-tradable and non-transferable, except in the case of transfer between the holding company and its subsidiary companies.



— One of the key incentives of GCP was market-based trading of credits. The Green Credit Rules provide for market-based trading of the green credits on a market platform.

— However, those involved in tree plantation under GCP will still be allowed a one-time exchange of green credit for compensatory afforestation obligations, to meet corporate social responsibility requirements or for other legal tree planting obligations. The credit will cease after exchanging it for compliance with legal obligations.

— The new methodology to calculate green credit under GCP was notified on August 29. It replaces the methodology first notified on February 22, 2024. As per the tweaked methodology, those who have invested in tree plantation activities will earn green credits on completion of a minimum of five years of restoration activities on degraded forest land and after achieving a minimum canopy density of 40 per cent.

— “The Green Credit shall be calculated based on the vegetation status, including the change in the canopy density and the number of surviving trees,” the government notification stated.

— This replaces the earlier benchmark of awarding green credit subject to a minimum density of 1,100 trees per hectare, within two years of plantation. The notification added that one green credit will be awarded for each new tree that is more than five years old. The credit will be awarded after evaluation and verification of the restoration activities carried out by designated agencies.

— Under the Green Credit Rules, companies or groups participating in tree-plantation are allotted degraded land parcels through state forest departments. The forest departments are responsible for the plantation. The notification also stated that the credit for tree plantation may be used for reporting under environmental, social, and governance leadership indicators.

— Prime Minister Narendra Modi had launched GCP in November 2023 at the United Nations Climate Conference in Dubai to promote voluntary actions for environmental protection. So far, 57,986 hectares of degraded forest land have been registered under GCP, as per government data. Ministry officials could not be reached for a comment on the tweak in methodology.

**Do You Know:**

— Under GCP, the environment ministry seeks ‘voluntary actions’ from companies, individuals, or groups for environmental protection activities such as tree plantation, water conservation, and waste management, among others, and awards credits in return.

— The revised methodology for tree plantation-based green credits puts into focus the growth and survival of trees, rather than the earlier benchmark of trees per hectare. This is important as government plantation and afforestation initiatives often face criticism for not focusing on survival, and quality and density of canopy. Revising credit generation only after a minimum of 5 years of work also stresses on the health of plantations.

**FAITHFUL FLOCK TO UTTARAKHAND’S NANDA DEVI TEMPLE AFTER ANIMAL SACRIFICE NOD**

Amid large-scale devastation in Uttarakhand due to heavy rain and flash floods that have resulted in the deaths of over 100 people and caused damage worth an estimated ₹5,000 crore, devotees have been returning to Nainital’s Mall Road to attend the fair at the annual Nanda Devi temple.



The event has come under scrutiny this year following the Uttarakhand High Court's order last week, which allowed animal sacrifice during the week-long fair in view of the representation from a local resident.

More than a 100 goats have been brought to the festival since then.

Nanda Devi is a manifestation of Goddess Parvati, the consort of Shiva, explains Lalit Tiwari, the head of Kumaun University's Botany Department and spokesperson for Ram Sewak Sabha, the trust that has been organising the fair since 1926.

"Nanda Devi is our patron deity. She is our mother and our protector," says Mr. Tiwari.

He describes the fair a "dynamic blend of biodiversity, spirituality and music" and a source of employment for local artisans. The event takes place at Nainital's famous Naina Devi temple for around a week, starting from 'ashtami', the eighth day, of 'bhadrapad', a month in the Hindu calendar.

This year, the fair began on August 28. Similar fairs are also held in other parts of the State, but not on the same scale.

"The local artisans use banana trees to craft idols of the goddess, which are decorated with flowers and spices. The idol is subsequently carried around the town on a palanquin, after which it is immersed in water," the trust spokesperson says.

He adds that the fair attracts people from all walks of life, including those from various castes and communities.

#### **Age-old ritual**

Apart from its culture, food and crafts, the fair also draws visitors due to its age-old animal sacrifice ritual. Offerings such as goats and buffaloes are often made to mark the fulfilment of vows made to Nanda Devi.

#### **'Part of Hindu culture'**

Bhagwati Prasad Joshi, the chief priest at the temple who also performs the sacrificial rituals, says, "Bali (animal sacrifice) has been part of the Hindu culture since time immemorial. In many cases, such as at the Nanda Devi fair, the sacrificed animal is consumed by the devotees as prasada (sacred food)."

The priest explains that animals earmarked for sacrifice are fed and bathed before the ritual, after which holy water and sacred rice are sprinkled on them.

"Only the animals that react when holy water and rice are sprinkled over them are considered fit for sacrifice," he adds.

BJP leader and lawyer Nitin Karki says that the annual ritual was "stopped" in the hill town after a 2010 High Court order based on a plea by an animal rights activist. The court passed a similar order in 2016, he adds. While the orders did not explicitly ban the slaughter of animals, they directed that the sacrifice take place at a slaughterhouse in adherence to the official norms.

However, with a paucity of approved abattoirs in the vicinity, the orders effectively limited the ritual of animal sacrifice, Mr. Karki adds.



On August 28, a day before the festival was set to start, the court allowed the sacrifice with similar restrictions based on a plea by a resident, Pawan Jatav, after the government submitted that preventing the practice altogether could result in a “law and order situation”.

The local civic body has appointed a veterinary doctor, Hema Rathore, outside the Naina Devi temple, whose job is to register every animal entering the premises and ensure that it returns alive in adherence to a recent order by the High Court prohibiting the sacrifice of animals within the temple premises.

“Since August 29, a total of 104 goats have been brought to the fair,” Ms. Rathore says.

Following clearance by Ms. Rathore, a constable herds the goats to a nearby abattoir. The meat is then distributed among the devotees, says Kamal Jagati, a journalist who has been working in Nainital for over two decades.

## SHORT NEWS

### AL-NURI MOSQUE

- Iraq’s historic al-Nuri Grand mosque and its leaning minaret was reopened after militants from the Islamic state group destroyed the mosque.
- The mosque, famous for its 12th-century leaning minaret, was destroyed by IS in 2017 and has been a focal point of UNESCO’s restoration efforts since 2020.
- The Nuri mosque was named after Nuruddin al-Zanki, a noble who fought the early crusaders from a fiefdom that covered territory in modern-day Turkey, Syria and Iraq. It was built in 1172-73, shortly before his death, and housed an Islamic school.

### BURKINA FASO BANS HOMOSEXUALITY

- Burkina Faso’s government has passed a law banning homosexuality, with those found guilty facing two to five years in prison.
- Burkina Faso joins the list of more than half of Africa’s 54 countries that have laws banning homosexuality with the penalties ranging from several years in prison to the death penalty.
- Burkina Faso has been run by the military under President Ibrahim Traore, following a coup in 2022 that the soldiers said was to stabilize the country amid a worsening security crisis and provide better governance.
- Last year, Burkina Faso along with Niger and Mali withdrew from the West Africa bloc known as ECOWAS.

### AT LEAST 1,000 KILLED AS LANDSLIDE HITS WESTERN SUDAN VILLAGE: ARMY

A deadly landslide devastated a village in the Marra Mountains area of western Sudan with reports stating that over 1,000 people have been killed.



The Sudanese residents took refuge in the Marra Mountains area where food and medication are insufficient after escaping the raging war between the Sudanese army and the paramilitary Rapid Support Forces (RSF) in North Darfur state.

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#### NIRF RANKING

IIT Madras has maintained its position as the top institution in India according to the latest National Institutional Ranking Framework (NIRF), also securing the best engineering college title for the tenth consecutive year. However, Union Education Minister Dharmendra Pradhan raised concerns about the 'peer perception' parameter, which accounts for 10% of the ranking score, highlighting potential disadvantages for government-funded and non-metropolitan institutions. He suggested that future frameworks should include more data-driven parameters, such as the number of entrepreneurs an institution produces, and cover more categories and institutions. The 2025 NIRF rankings cover 17 categories, with top spots also awarded to IISc Bengaluru for Universities and Research Institutions, IIM Ahmedabad for Management, AIIMS New Delhi for Medical, Jamia Hamdard for Pharmacy, IIT Roorkee for Architecture, Hindu College for Colleges, and National Law School of India University for Law. Jadavpur University was named the best among State Public Universities, and IGNOU led among Open Universities.

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#### IN A FIRST, ALL BUILDINGS TO BE GEO-TAGGED IN CENSUS 2027

The Centre plans to geo-tag all buildings — residential and non-residential — in the Census 2027, The Indian Express has learned.

It is learnt that a Digital Layout Mapping (DLM) will be used by enumerators to geo-tag all buildings with their assigned Houselisting Blocks (HLBs) during the Houselisting Operations (HLO), the first phase of the Census. Geo-tagging is the process of assigning a unique latitude-longitude coordinate to a specific building on a Geographical Information System (GIS) map.

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#### INDIA'S CLIMATE FINANCE REQUIREMENTS: AN ASSESSMENT

— The study, by Janak Raj and Rakesh Mohan of the Centre for Social and Economic Progress (CSEP), is the first-of-its-kind bottoms-up sector-specific assessment of requirements of climate finance in India.

— According to the study, an additional investment of about \$467 billion between now and 2030 would be needed to enable a significant decarbonisation of four of India's most emissions-intensive sectors – power, steel, cement and road transport sectors.

— The study assessed the steel sector's requirement till 2030 as \$251 billion and that of cement to be \$141 billion.

— The power sector, which is already undergoing a rapid transformation due to deployment of renewables, would need about \$47 billion additional investment until 2030, while road transport would require \$18 billion, the study said.

— The authors said the cumulative \$467 billion would help India not just easily achieve its international commitments for 2030 under the Paris Agreement, but advance much further on the road to low-carbon development.



## DENOTIFIED AND NOMADIC TRIBES DAY

— It is marked annually on August 31 to commemorate the repeal of the British-era Criminal Tribes Act, 1871, which criminalised nomadic, semi-nomadic and denotified tribes.

— Denotified tribes (DNTs) are communities that were 'notified' as being 'born criminal' during the British regime under a series of laws starting with the Criminal Tribes Act of 1871.

### Commissions and Committees formed for DNTs

- The Criminal Tribes Inquiry Committee, 1947 constituted in the United Provinces (now Uttar Pradesh)
- Ananthasayanam Ayyangar Committee in 1949 (it was based on the report of this committee the Criminal Tribes Act was repealed)
- In 1965, an Advisory Committee constituted for revision of the SC and ST list under the chairmanship of B N Lokur referred to denotified tribes.
- A National Commission for De-notified, Nomadic and Semi-Nomadic Tribes (NCDNT) was constituted in 2006, headed by Balkrishna Sidram Renke. The Renke commission estimated their population at around 10.74 crore based on Census 2001.
- To compile state-wide Denotified, Nomadic and Semi-Nomadic Tribes (DNT/ NT/ SNT), a commission was established under Bhiku Ramji Idate. As per the report, over 260 extremely marginalised communities have never been identified or included in any of the reserved categories.

## BHARTI

— Recently, the Agricultural and Processed Food Products Export Development Authority (APEDA) launched its new initiative, BHARATI. BHARATI stands for Bharat's Hub for Agritech, Resilience, Advancement and Incubation for Export Enablement.

— It has been designed to empower 100 agri-food and agri-tech startups, accelerate their journey, promote innovation and create new export opportunities for young entrepreneurs.

## BIHAR RAJYA JEEVIKA NIDHI SAAKH SAHKARI SANGH LIMITED

— Recently, Prime Minister Shri Narendra Modi launched the Bihar Rajya Jeevika Nidhi Saakh Sahkari Sangh Limited.

— The objective of establishing the Jeevika Nidhi is to provide easy access to funds at affordable interest rates to community members associated with Jeevika. All registered cluster-level federations of Jeevika will become members of the Society.

— For the operation of this institution, the Government of Bihar as well as the Central government, will contribute funds. The Jeevika Nidhi has been conceived as an alternative financial system to reduce dependence on microfinance institutions and ensure the timely availability of larger loan amounts at lower interest rates.



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#### JAROSITE MINERAL IN MATANOMADH

- Matanomadh, a thinly populated village nearly 100 km west of Bhuj town in Gujarat's Kutch district, might end up as a potential test bed for the Indian Space Research Organisation (ISRO) ahead of its Mangalyaan-2 mission to Mars.
- Recently, the jarosite mineral found in Matanomadh in 2016 was confirmed to be around 55 million years old, corresponding with the Paleocene period in the geological timeline.
- The dating of this mineral, found in a few rock structures in Matanomadh, suggests that there was a similar geological occurrence on both the planets millions of years ago.
- The Matanomadh site could thus offer field-analogue missions for Mars, where rover motion, instrument testing, drilling, and geochemistry experiments could be performed.
- ISRO has been trying to simulate the living conditions and environment of Mars and Moon in a desolate high-altitude village in Ladakh through its HOPE (Himalayan Outpost for Planetary Exploration) mission.

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#### SPYWARE 'GRAPHITE'

- Recently, the Trump administration has unfrozen a stalled Biden-era contract with Paragon Solutions, a spyware company founded in Israel. With this, the US Immigration and Customs Enforcement (ICE) can gain access to the company's powerful hacking software — known as Graphite.
- Graphite is designed to gain remote access to a mobile phone and essentially take control of it.
- The user of the spyware can not only access the mobile user's photos, read their messages, and track their whereabouts, but also monitor encrypted messages sent on platforms such as WhatsApp and Signal.
- The spyware also enables the phone to be used as a listening device by manipulating its recorder.

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#### EBOLA

- The 16th outbreak of Ebola in Congo is suspected of causing 15 deaths among 28 people with symptoms.
- The Ebola virus can spread quickly and be fatal in up to 90% of cases. Symptoms include fever, vomiting, diarrhea, muscle pain and at times internal and external bleeding.
- According to the WHO, the Ebola virus is transmitted to people from wild animals (such as fruit bats, porcupines and non-human primates) and then spreads in the human population through direct contact with the blood, secretions, organs or other bodily fluids of infected people, and with contaminated objects such as sheets.
- The Ebola virus was first described in 1976 near the Ebola River in what is now the Democratic Republic of the Congo.



— Ebolavirus is one of 3 members of the Filoviridae family (filovirus), along with genus Marburgvirus and Cuevavirus

#### ANUTIN CHARNVIRAKUL

— Thailand’s parliament on September 5 overwhelmingly voted to elect Anutin Charnvirakul of the Bhumjaithai Party (BJT) as the country’s next Prime Minister.

— He is Thailand’s third Prime Minister in two years, a week after Paetongtarn Shinawatra was dismissed from the post by the Constitutional Court.

#### HOCKEY ASIA CUP 2025

— India won the 4th Asia Cup hockey title after defeating South Korea 4-1 at the Rajgir Sports Complex, Bihar. With this win, India have ended the eight-year wait to regain the title.

— With this win, India have qualified for the FIH Men’s Hockey World Cup 2026 in the Netherlands and Belgium. They have now won the Asia Cup title four times overall, behind only South Korea’s total of five.

— The 12th Men’s Asia Cup Hockey Championship was organised at the Rajgir International Stadium in Rajgir, Bihar, from 29th August to 7th September.

— The mascot of the Asia Cup Hockey, named “Chand,” is inspired by the national animal, the tiger. The name “Chand” is inspired by hockey legend Major Dhyan Chand, who created history in the game by practising under moonlit nights.

— Eight nations and 150 players participated in the championship.

#### BWF WORLD CHAMPIONSHIPS 2026

— The 2026 BWF World Championships will be held in New Delhi, India. India last hosted the BWF World Championships in Hyderabad in 2009.

— P.V. Sindhu is the first and only Indian to win a gold medal at the BWF World Championships in 2019. So far, eleven Indian badminton players have won 15 medals at the BWF World Championships over the years.



## BUSINESS AND ECONOMY

### INDIA'S DIESEL EXPORTS TO EUROPE SKYROCKET IN RUN-UP TO EU BAN ON FUELS MADE FROM RUSSIAN OIL

As the Europe Union prepares to ban petroleum products refined from Russian crude from January 2026, India's diesel exports to Europe jumped to an 11-month high in August, according to vessel tracking data.

— Industry insiders and experts believe that India's petroleum product exports to Europe, particularly diesel, should remain robust in the months leading up to the EU ban as the continent would be stockpiling fuels and mitigating anticipated supply shortfalls.

— Europe's increased lifting of diesel from India comes at a time when the US and some of its Western allies have amped up the rhetoric against India over its hefty purchases of Russian crude, and have alleged that the country is profiteering by supplying products derived from discounted Russian crude to the West—mainly Europe—which has an embargo on Russian oil and petroleum products.

— India has rejected these allegations, stating that there is nothing illegal in importing Russian oil and exporting petroleum products, and countries that have a problem can just stop importing fuels from India.

— Among the key reasons for the surge in diesel exports to Europe is the advancing of maintenance shutdown of Shell's Pernis refinery in the Netherlands from 2026, which is being seen as part of Europe's plan to ensure that its own refineries are not bogged down with turnaround schedules once the January 2026 ban takes effect.

— The EU had banned petroleum product imports from Russia—its key source market—in February 2023 as part of its actions to penalize Russia for the war in Ukraine. In the months leading up to the ban, European countries had significantly increased petroleum product imports to build heavy stockpiles.

— Indian oil industry officials said that even in the event of Europe stopping all fuel imports from India, the impact would only be transitory as there are other markets where the fuels can be exported.

#### **Do You Know:**

— India is the world's third-largest consumer of crude and depends on imports to meet around 88 per cent of its requirement. Russian crude, which usually comes at a discount, has helped India save foreign exchange worth billions of dollars over the last three years.

— Amid the strain in ties between Delhi and Washington following US punitive tariffs on India over its purchase of Russian oil, Union Finance Minister Nirmala Sitharaman said Friday that Delhi will continue to buy oil from Moscow because India's oil purchases are driven by economic and commercial considerations.

— She said the impact of 50 per cent tariffs imposed on Indian goods by the Trump administration will be offset to a certain extent by the Goods and Services Tax (GST) reforms, which included



simplification and reduction of indirect tax rates on numerous items. The government, she said, is also working on measures to “handhold” those hit by the high US tariffs.

## WHY NRIS ARE CHOOSING INDIA FOR MEDICAL TOURISM

Healthcare decisions, perhaps more than any other, show the complex equation of trust, access and value for money. Add to that the factor of geographical distance for NRIs and the decision becomes even more nuanced. For millions of NRIs, this decision is now shaped by the realities of rising healthcare costs abroad and the assurance of timely, high-quality care back home in India.

When people think of medical tourism, they often imagine a trade-off between affordability and quality. India has rewritten the equation by proving one doesn't need to compromise on either.

The numbers speak for themselves. A complex surgery in the U.S. can easily cost more than \$1,00,000. The same procedure at a top hospital in India may cost just \$10,000 to \$20,000.

Also, our data suggests NRIs can save anywhere from 60-90% on major surgeries in India.

With relaxed norms, affordable policies and ease of claims, growth has trickled down to health insurance too. Over the last one year, adoption of health cover among NRIs has risen by more than 150%. Young NRIs under 35 led the way with a 148% rise, while women buyers climbed 125%. Notably, 60% of NRIs are buying health cover for elderly parents living in India. Here's what makes India the top choice for medical tourism

### Value for money

Undeniably, the most important factor driving this adoption is affordability. For instance, a heart bypass surgery costs only \$5,000-\$8,000 in India compared with \$70,000- \$1,50,000 in the U.S. Similarly, a knee replacement surgery in the U.S. costs up to \$50,000 compared with only \$4,000-\$6,000 in India. More important, this affordability doesn't come at the cost of quality.

From liver and kidney transplant to dental procedures and other major surgeries, the cost gap is huge. Even routine treatments show similar gaps, with India offering care at less than a third of international prices. Medicines, too, are up to 90% cheaper compared with global markets. So, the financial logic is undeniable. India offers world-class care at a fraction of the price, making it an increasingly compelling choice for NRIs.

Coming to health insurance premiums, in India, they are often 25-40 times cheaper than in the U.S. or GCC countries like Kuwait, Oman, Qatar, Saudi Arabia, and the UAE. For NRIs, this means getting comprehensive protection without the financial strain.

### Financial ripple effect

What's fascinating is the benefits of medical tourism are no longer restricted only to big cities. In fact, almost half of NRI health insurance claims now come from Tier-3 towns and cities. It is true metros like Hyderabad, Chennai, Kochi, and Thiruvananthapuram continue to remain trusted choices. But what is encouraging is smaller hubs such as Thrissur, Kollam, and Thane are quickly gaining ground as well. Access to quality care in these regions has been made possible by better infrastructure and rise of digital platforms.



Savings from choosing treatment in India aren't just figures on a hospital bill. They directly impact a family's financial security. For NRIs already balancing mortgages, children's education and retirement goals, this difference could be life-changing.

Another finding is most claims by NRIs are tied to respiratory diseases, infectious ailments, cancer, and heart conditions. What the ailments have in common is they are not one-time occurrence but recurring health needs demanding long-term planning. By having insurance in India, families of the NRI can plan ahead without draining savings each time a health emergency strikes.

This shift also shows NRIs are becoming more health-conscious. Instead of waiting for a crisis to strike, they're taking charge early and protecting themselves against risks they know could come their way.

#### **Policy pull, digital push**

Government initiatives like Heal in India and the growth of digital-first platforms have further simplified the process. NRIs can explore, compare and buy policies remotely. Cashless claims across hospitals have bridged the distance, ensuring seamless access even when NRIs are thousands of miles away. The convenience of digital access, coupled with the affordability of premiums, has turned insurance into a natural extension of the medical tourism story.

India's medical tourism market is on track to cross \$13 billion, and that growth opens a clear opportunity for the industry. With the right approach, India can strengthen its place as a global hub where healthcare and financial protection go hand in hand.

### **TRUMP'S TARIFFS: A TEST OF SOLIDARITY AT BRICS, THE CLUB OF THE SANCTIONED**

On September 8, the leaders of the BRICS countries logged into a virtual summit that felt both routine and momentous. Only weeks earlier, they had gathered in Tianjin for the Shanghai Cooperation Organisation's (SCO) in-person summit, where Chinese President Xi Jinping had invited Indian Prime Minister Narendra Modi and Russian President Vladimir Putin to underscore solidarity amid mounting geopolitical headwinds. Yet the carefully choreographed "Tianjin triangle" — Xi flanked by Modi and Putin — was dramatically sharpened by events back in Washington. Less than a week earlier, the Donald Trump administration had imposed sweeping tariffs on Indian exports, turning what might have been another scripted diplomatic exercise into a vivid display of shared concerns.

The scale of America's sudden protectionism was striking. The US-India goods trade stood at \$129 billion in 2024, with Washington running a \$45.8 billion deficit. When Trump doubled tariffs on nearly two-thirds of India's exports on August 27, duties affected garments, gems, jewellery, and seafood — effectively rendering 55 per cent of India's exports to America uncompetitive. Washington justified the move as punishment for India's discounted Russian oil purchases, but the collateral damage was broad, threatening jobs and denting sectoral growth. It was a sharp reminder of how vulnerable emerging economies remain to unilateral policy decisions made elsewhere.

Washington's displeasure with the Tianjin summit and the BRICS in general was palpable. US officials downplayed the SCO gathering as little more than a photo opportunity for the authorities. At the same time, Trump derided BRICS as a talk shop for failing economies that could never rival Western institutions. The rhetoric mixed disdain with anxiety, underscoring how both the SCO's



optics and BRICS' expansion are increasingly perceived in Washington as instruments of counter-Western alignment.

The 2025 BRICS summit felt less like a routine gathering and more like a council of the sanctioned. For India, the unease was amplified by its growing trade deficits within the bloc — most starkly with China, where the gap has widened from about \$63 billion in 2017-18 to over \$99 billion in 2024-25, with exports falling nearly 14 per cent even as imports surged. While Xi Jinping urged the BRICS to oppose protectionism and defend multilateralism, India's External Affairs Minister, S Jaishankar, sharpened the debate by warning that supply chains, stretched by wars and pandemics, were now “weaponised” by tariffs. His call for “resilient, reliable, redundant and shorter supply chains” served both as a rebuke of Washington's coercion and as a subtle reminder of Beijing's dominance — underscoring that solidarity without addressing asymmetry leaves India vulnerable.

Another theme dominated the summit: The collective push to weaken the dollar's stranglehold. At the 17th BRICS summit earlier this year, Vladimir Putin, boxed in by sanctions, boasted that most of Russia's trade with BRICS partners is now settled in local currencies and pressed for an “independent settlement system”. Over time, BRICS welcomed pilot projects such as BRICS Bridge and BRICS Pay, while showcasing progress — Russia's SWIFT alternative, China's expanding cross-border payments system, and India's special rupee accounts for bilateral settlements. The New Development Bank (NDB) has also broadened its lending footprint and membership, offering a sense of momentum.

Yet ambition still outpaces practice. More than half of global transactions are cleared through SWIFT, and the US dollar remains the currency of choice. Xi's rhetoric on de-dollarisation remains careful, reflecting divisions within BRICS over conceding monetary space to Beijing, while India's Reserve Bank continues to resist full capital-account liberalisation. Flagship payment platforms are still experimental, and the bloc's existing financial tools — the NDB and a modest reserve pool — are insufficient to counter the vast trade volumes that BRICS commands. For now, BRICS finance is less an alternative architecture than a collection of experiments, driven by frustration but constrained by asymmetries and caution.

Across BRICS, members are testing local currency settlements, building South-South trade corridors, and piloting digital payments. At the same time, global firms are hedging against disruption by shifting production to Vietnam, Mexico, and the UAE. For India, this restructuring presents both opportunities and risks. Its rise has been tied to integration with Western markets, but the tariff shock revealed the perils of overdependence. New Delhi's response has been twofold: Diversify through trade pacts with Australia, Africa, the UAE, and others, and insist that BRICS experiments complement — rather than replace — the existing dollar order.

The bloc's expansion to 11 members representing over 40 per cent of global GDP in PPP terms is a symbolic counterweight to US-led institutions. Yet, enduring divisions — border conflicts between India and China, as well as sanctions on Russia and Iran — render the idea of a common BRICS currency implausible. Instead, attention is shifting to incremental mechanisms: NDB lending, currency swap lines, and regional trade settlements. Whether this evolves into a genuine shift in the global financial architecture will depend less on summit declarations and more on sustained institutional building.

Notably, India has resisted being cast in an anti-Western mould. Unlike China and Russia, which often position the BRICS as a counterweight to the West, New Delhi frames the bloc as a platform



for cooperation, rather than confrontation. It continues to emphasise strategic autonomy — balancing ties with the United States and Europe while hedging through BRICS. For India, the challenge is to harness tariff shocks as catalysts for reform and diversification while ensuring BRICS enhances resilience rather than undermines existing partnerships, even under the ongoing tariff pressures.

The optics of the Tianjin summit and the subsequent BRICS meeting add geoeconomic stress on Washington. Trump's erratic swings — from warning that India risked drifting into the arms of “deepest, darkest China” to proclaiming that he and Modi would “always be friends” — underscore how personal dynamics increasingly drive US trade policy. For BRICS, the tariff crisis offers symbolism, but optics alone cannot substitute substance. Sustainable progress requires addressing contradictions, including the India–China border disputes, sanctions on Russia, and uneven trust among members. The path forward lies in credible institutions, robust financial instruments, and pragmatic management of great-power rivalries.

#### INDIA HAS SHOWN FLEXIBILITY ON COTTON IMPORTS. IT'S FOR US TO RECIPROCATE

India has allowed cotton imports at zero duty till December 31, 2025. The “temporary” exemption from the earlier chargeable 11 per cent tariff comes amid domestic production of the fibre falling to an estimated 311.4 lakh bales (lb) in 2024-25 (October-September), from 336.5 lb in the previous marketing year and the all-time-high of 398 lb of 2013-14. But it's not just lower output — compounded by a 2.6 per cent dip in the area sown this kharif season — that may have prompted the Narendra Modi government's decision. No less significant is the signal it sends out to the United States that has seen the value of its cotton exports slide from \$8.82 billion in 2022 to \$4.96 billion in 2024, largely because of reduced purchases by China (from \$2.79 billion to \$1.47 billion). With China further slashing imports to a mere \$150.4 million in January-June 2025, it means a huge loss of market.

No wonder the US wants other countries to buy more. Vietnam, Pakistan, Turkey and India have all done that. India alone has imported \$181.5 million worth of US cotton in January-June, as against \$86.9 million during the first half of 2024. The duty removal is likely to give an added boost to that. The US Department of Agriculture has, indeed, welcomed the move. It sees this as not only increasing US cotton bookings, but also helping Indian textile exporters access cheaper and contamination-free fibre. Nearly 95 per cent of imported US cotton, the agency claims, is processed and re-exported as yarn, fabric and apparel. But it is the optics, more than anything else, in the context of a low moment for Delhi-Washington ties, that's encouraging. Not reviving the stalled trade talks is in neither side's interest. By making cotton imports duty-free, augmenting availability of fibre for its textile industry, India has shown willingness and flexibility to negotiate. It's for the US now to reciprocate, by scrapping the unreasonable and irrational 25 per cent Russian oil import “penalty” on India.

There's a loser in all this, though. The Indian cotton farmer has been deprived of any new cropping technology after genetically modified Bt hybrids, which drove up average lint yields from 302 kg to 566 kg per hectare between 2002-03 and 2013-14. Since then, yields have dropped to sub-450 kg levels, even as cotton has become susceptible to so-called secondary pests such as pink bollworm and whitefly in addition to boll rot fungal pathogens. The results of non-investment in breeding research and development are evident from record imports of 39 lb projected for 2024-25. This double-whammy situation, of technology denial alongside import inundation, has been witnessed even in mustard and soyabean. The Indian farmer can — and should be enabled to — compete, but not with hands tied.



## BEHIND JAPAN'S INVESTMENT NUMBERS, A MESSAGE TO US PRESIDENT TRUMP

AT A time when the US administration has come down hard on the Indian economy by imposing tariffs and President Donald Trump described it as a “dead economy”, Japan has increased its investment target from 5 trillion Yen (USD 34 billion) to 10 trillion Yen (USD 68 billion), in what is being seen as a vote of confidence for New Delhi.

— Prime Minister Narendra Modi, who was in Japan for two days, wrapped up his visit on Saturday with a ride on the bullet train with Japan Prime Minister Shigeru Ishiba.

— Behind the headline number are Japan's investments in India that have continued to accelerate, in a strong signal of confidence.

— The two sides had set a target of 5 trillion Yen for public and private investments and financing by 2026. That, sources said, had already been achieved in 2025, and the target was increased to 10 trillion Yen.

— Over 170 MoUs signed in two years represent more than USD 13 billion in committed investments, said sources.

— “This spread of investment across steel, automotive, renewables, semiconductors, real estate and aerospace cements Japan's confidence in India's long-term economic potential,” a source said.

— The second element in Japanese investments is providing benefits to Indian SMEs. Sources said Japanese industry partnerships are pulling Indian SMEs into global supply chains.

— The third element is pertaining to the farmers and sustainable development.

— The fourth element is about exports and manufacturing with Japanese joint ventures and know-how. Source said that Japanese JVs in India will unlock export growth.

— The fifth element is about human resources and knowledge exchange. There will be a sectoral focus on semiconductors, AI, IT, robotics and clean energy.

— The sixth element is Assam-ASEAN Holdings MoU. A notable MoU was signed between the Government of Assam and M/s ASEAN Holdings, highlighting Japan's commitment to India's northeast.

— The seventh element is ‘Make in India, make for the world’. The vision now extends beyond bilateral ties as at the Japan-India-Africa Forum and recently held 9th TICAD Summit in Tokyo, India emerged as an anchor country for connectivity and industrial corridors.

— Its priorities are mineral security (rare earths, lithium, cobalt), supply chain resilience in semiconductors and EVs, export markets in Africa and Middle East for Made-in-India goods with Japanese technology.

— This ensures that “Make in India, Make for the World” is realised, with India-Japan partnership shaping not just economies but also regional security and resilience.



**Do You Know:**

- The partnership between India and Japan, two of Asia’s leading democracies and among the world’s top five economies, is rooted in civilizational ties that have been reinforced by convergence in their regional and global outlooks.
- India’s Act East Policy and Indo-Pacific Oceans Initiative (IPOI) align closely with Japan’s Free and Open Indo-Pacific (FOIP) policy. Japan leads IPOI’s connectivity pillar, and is India’s largest Overseas Development Assistance (ODA) donor.
- Cooperation between the countries extends to plurilateral platforms such as the Quad, International Solar Alliance (ISA), Coalition for Disaster Resilient Infrastructure (CDRI), and Supply Chain Resilience Initiative (SCRI).
- Malabar (with the US and Australia), Milan (multilateral naval), JIMEX (bilateral maritime), Dharma Guardian (Army), and Coast Guard cooperation are held regularly. 2024-25 saw the participation of service chiefs in India and Japan, strengthening interoperability.
- India-Japan pacts are building the bridge to a new era of cooperation. Some key elements of the partnership:
  - Investment pledge: Over 170 MoUs signed in two years represent more than USD 13 billion in committed investments
  - Focus on SMEs: Japanese industry partnerships are enabling Indian SMEs enter global supply chains
  - Farming & sustainable Development: Japanese cooperation is directly empowering India’s rural economy through green energy projects
  - Export Boost: Exports and manufacturing with Japanese joint ventures and know-how also unlocks India’s export growth
  - Talent mobility & knowledge exchange: The target is 5 lakh Indians and Japanese exchanges in 5 years via study abroad, internships and employment
  - Northeast development: The Assam-ASEAN Holdings MoU focuses on investment in industrial infrastructure, logistics, and agro-based industries in the NE region
  - ‘Make in India, make for the world’: The vision is being realised with India-Japan partnership shaping not just economies but also regional security and resilience.

**GOVT PLANS TO CUT DOWN ON IMPORTS OF PHARMA AGENTS, BIOFUEL ENZYMES**

From active pharmaceutical agents for making key medicines to enzymes needed for developing biofuels, and reagents needed for manufacturing biofertilizers — the government under its BioE3 policy plans to set up around 16 biomanufacturing hubs across the country to ensure that India starts making the components for which it is largely dependent on imports.

- The government has already listed 1,000 such products for which there is a need to develop indigenous manufacturing facilities, which will be put on a website soon.



- There has been a push towards manufacturing within the country since Covid-19 pandemic, with government policies such as performance-linked financial incentives to drug manufacturers. The department has been somewhat successful in scaling-up manufacturing of some of the drugs, but fermentation-based products still remain a challenge for the country.
- With plans of setting up large fermenters of around 500 litres or 1,000 litres, these hubs can help push the manufacturing of not just fermentation-based medicines but also other products such as biofuels.
- These biomanufacturing hubs, in addition, will also look at scaling up innovative solutions such as novel monoclonal antibody treatments, new technologies for carbon capture, or smart proteins to improve nutrition developed under the programme from proof of concept to market ready products.
- The Department of Biotechnology has already supported a set up of six biofoundries — a specialised facility that helps to develop and conduct the initial tests.
- The biomanufacturing hubs will be set up in research institutes, private companies that specialise in a particular form of manufacturing, or near existing knowledge hubs for specific industries.
- The facilities can be accessed by government and private research institutes, universities, and colleges, along with start-ups and other companies. While the private companies will be charged, mainly to cover the cost of consumables, human resources, and other overhead charges.
- As per its policy, the start-ups will be charged a maximum of 5% over the actual costs while companies may be charged up to 15% over the cost. The policy also states that the facility will not claim any intellectual property rights.

**Do You Know:**

- The BioE3 Policy is aligned with India's vision of Green Growth (announced in the Union Budget 2023-24) and also with the clarion call of the Prime Minister on 'Lifestyle for Environment (LiFE)' that envisions collective approach towards sustainability.
- The objective of the BioE3 Policy is to set forth a framework that ensures the adoption of cutting-edge advanced technologies, and aligning innovative research for promoting Biomanufacturing.
- The BioE3 Policy outlines guidelines and principles for enabling mechanisms for 'Fostering High Performance Biomanufacturing' in the country across diverse sectors.
- The Policy aims at revolutionizing the biomanufacturing process for enhanced efficiency, sustainability, and quality while also accelerating the development and production of bio-based high-value products.

**QUESTIONABLE CHEER**

The GDP growth numbers released on Friday, showing that growth in Q1 of this financial year stood at 7.8%, came as a pleasant surprise at a time when most of the commentary has been about the factors holding growth back. For instance, even the Reserve Bank of India, as recently as August 6, had predicted that growth would be at 6.5% in Q1. It was off by a significant 1.3



percentage points less than a month before the data came out, something it must introspect about. Within the data, the strong manufacturing sector growth, of 7.7%, was especially heartening given that it came on a relatively high base of 7.6% in Q1 of last year. Some commentators have said that this is because companies were ramping up production and exports ahead of the August tariff deadline by the U.S. However, given that merchandise exports grew just 1.6% in Q1, the more likely reason is that companies were catering to domestic demand. However, the numbers released by the government do not provide much clarity here. The manufacturing sector, as measured by the Index of Industrial Production, grew at 3.3% in Q1, slower than the 4.3% seen in Q1 last year. Steel consumption was drastically slower in Q1 this year than last year. Both private and commercial vehicle sales actually contracted 5.4% and 0.6%, respectively, in Q1. Railway freight traffic grew by 2.5% versus 5% last year, while air freight grew at 5.4% compared to 13.9% last year. Two-wheeler vehicle sales contracted 6.2% while three-wheeler sales were flat at 0.1% growth. Diverse data show that the core and consumer sectors were slowing, and so the pickup in the manufacturing sector is worth a deep examination. The strong performance by the services sector is welcome, and shows how dependent the Indian economy is on this sector.

Chief Economic Adviser V. Anantha Nageswaran has said that the government was retaining its 6.3%-6.8% growth prediction for the year. This means that, with 7.8% in Q1, the government expects growth to significantly slow down in the remaining three quarters, despite its statements about the limited impact of the U.S. tariffs. The data also call into question the robustness of the statistical system, since a nominal GDP growth of 8.8% assumes that inflation was just 1% in Q1. Clearly, price levels are not being captured adequately. A relatively low nominal growth rate also makes it more challenging for the government to meet its fiscal deficit targets, especially at a time when it expects a revenue hit due to the upcoming GST rate cuts. Overall, the GDP numbers have brought cheer, but also several questions.

## CUTS IN TIME

The sweeping changes to the Goods and Services Tax (GST) regime, authorised by the GST Council on Wednesday, have come as a shot in the arm for the mood of the people, and, potentially, for the economy overall. Few things spur optimism and demand as effectively as tax cuts. The Centre did well to push the GST Council towards these reforms, which rose to the occasion and cleared them quickly. Criticism that these reforms have come too late is neither here nor there. The GST Council is a federal body, and any of the States could have suggested these rate cuts earlier but did not. The appropriateness of the Prime Minister's announcement of the reforms in his Independence Day speech, coming as it did before either the relevant Group of Ministers or the GST Council met, can be questioned. But here, too, the fact that the Council announced its decisions on the first day of what was supposed to be a two-day meeting shows that the States were on board. The minutes of the 56th meeting will reveal each member's stated position. The rate changes span nearly every sector, and are, overwhelmingly, in the downward direction. Very few items, such as high-end motorcycles and higher priced apparel, are set to become more expensive. Tempting as it was to pack the 40% bracket with more items, the GST Council did well to keep it narrow. Overall, these rate cuts, coupled with the income-tax rate cuts announced in Budget 2025, should serve as a much-needed boost to consumption at a time when other engines of growth such as exports and private investment are sputtering.

The government has maintained that the revenue implication of these GST rate cuts would be around ₹48,000 crore a year, based on 2023-24 consumption data. Given the scope of the cuts, this seems like an underestimation. However, only time will tell what the actual number will be.



It is to be noted that the GST Council decided to do away with the compensation cess, despite Opposition-governed States calling for one to protect their revenues. Such a cess would have diluted the rate rationalisation and simplification efforts and is best eschewed. Instead, the States are now going to have to look to their own revenue sources, as well as the 16th Finance Commission, to offset the losses they face. The new GST 2.0 still has some anomalies, and is still more complicated than it needs to be, but the removal of duty inversions and the easing of paperwork are a huge improvement. The government should now revive the National Anti-Profiteering Authority, at least temporarily, to ensure that the rate cuts are passed on once they kick in on September 22.

#### GST 2.0 UNVEILED: TWO-SLAB STRUCTURE CLEARED, NEW RATES WILL COME INTO EFFECT SEPTEMBER 22

The Goods and Services Tax (GST) Council, in its 56th meeting which lasted over 10 hours Wednesday, cleared the next-generation reforms under the eight-year old indirect tax regime. This effectively paves the way for a broad two-slab structure of 5 per cent and 18 per cent with a demerit rate of 40 per cent rate only for super luxury, sin and demerit goods.

— The aim: lower tax burden on common people with sweeping rate cuts and reduction in GST slabs, ease blocked working capital, and facilitate ease of doing business with automated refunds and registration process.

— All the rate changes, except those for tobacco and tobacco-related products, will come into effect from September 22, the first day of Navratri, said Union Finance Minister Nirmala Sitharaman who chaired the meeting that was attended by ministers from 31 states and Union Territories.

— The GST Council announced sweeping rate cuts for common-use items ranging from packaged and branded food items like fruit juices, butter, cheese, condensed milk, pasta, packaged coconut water, soya milk drinks, nuts, dates and sausages, and medical items including medical grade oxygen, gauze, bandages, diagnostic kits (5 per cent from 12 per cent) to nil GST rate for ultra-high temperature milk, chhena or paneer, pizza bread and khakra, plain chapati or roti and education item of erasers from 5 per cent at present.

— Other common use items that have also seen GST being reduced to 5 per cent from either 12 per cent or 18 per cent include items such as hair oil, soap bars, shampoos, toothbrushes, toothpaste, bicycles, tableware, kitchenware and other household articles.

— GST has also been reduced for white goods such as air conditioners, television sets, dishwashing machines to 18 per cent from 28 per cent.

— Small cars with engine capacity not exceeding 1200 cc (petrol) and 1500 cc (diesel) and with length not over 4 metre will now be in the 18 per cent slab.

— Another key decision was regarding the blanket exemption provided for life insurance, whether term or life, ULIP or endowment policies for individuals along with exemption for health insurance for individuals including family floater plans and policies for senior citizens.

— Beauty and physical well-being services used by common people such as services of gyms, salons, barbers and yoga centres will now face a lower GST of 5 per cent as against 18 per cent at present.



— With these reforms, the GST will now get rid of the multiplicity of slabs – 5 per cent, 12 per cent, 18 per cent and 28 per cent – with a broad two-slab structure – a merit rate of 5 per cent and a standard rate of 18 per cent – in addition to a special demerit rate of 40 per cent for super luxury, sin and demerit goods such as pan masala, tobacco and cigarettes.

— The streamlining of slabs will help in correction of inverted duty structure – where the tax rate on output supply is lower than the tax rate on inputs and which was affecting the working capital and cash flow of businesses – and numerous classification disputes arising because of the multiplicity of rates and differential rates for similar items, especially in the automotive and food sectors.

— The long-pending correction of inverted duty structure has also been carried out for textiles and fertiliser sectors. GST cuts were announced for the manmade textile sector, with manmade fibre seeing the tax rate being cut to 5 per cent from 18 per cent and manmade yarn to 5 per cent from 12 per cent.

— Tobacco and related products will continue to operate under the current system — along with the additional cess — until the amount borrowed by the government during the pandemic years to compensate states for shortfall in revenue is paid back.

— FM said after the loan repayments are met, there will not be any cess and those items which attracted the compensation cess will attract a special rate of 40 per cent.

— The Central government had borrowed Rs 1.1 lakh crore in 2020-21 and Rs 1.59 lakh crore in 2021-22 as back-to-back loans to meet a part of the shortfall in cess collections.

— As per the Union Budget for 2025-26, the government expects to collect Rs 1.67 lakh crore as compensation cess in the current fiscal, with repayment to the tune of Rs 67,500 crore for these back-to-back loans scheduled for the year.

— Previously, Rs 78,104 crore was paid back in 2023-24 and Rs 1.24 lakh crore in 2024-25, as per the Budget documents.

— Economists, however, have predicted a loss in revenue for the government at both the Central and state level. In a note on August 19, HSBC economists had estimated that the rate rationalisation exercise could cost the exchequer around Rs 1.43 lakh crore, or 0.4 per cent of GDP.

— Asked about the impact of the GST rate cuts on the GDP at the press conference Wednesday, Sitharaman said it was too early to make any calculation

**Do You Know:**

— The GST regime came into force after the Constitutional (122nd Amendment) Bill was passed by both Houses of Parliament in 2016. It came into effect in 2017 and was billed as an attempt to simplify the existing tax structure in India, where both the Centre and states levied multiple taxes, and to make it uniform.

— The President set up the GST Council as a joint forum of the Centre and the states, under Article 279A (1) of the amended Constitution. It said that members of the Council include the Union Finance Minister (chairperson), and the Union Minister of State (Finance) from the Centre. Each state can nominate a minister in charge, of finance or taxation or any other minister, as a member.



— According to Article 279, the council is meant to “make recommendations to the Union and the states on important issues related to GST, like the goods and services that may be subjected or exempted from GST, model GST Laws”.

— A cess is a form of tax levied by the government on tax with specific purposes till the time the government gets enough money for that purpose.

#### IN GST 2.0 CALCULUS, BEHAVIOURAL NUDGES — PACKAGED FOODS TO ACS

Catalysing a behavioural change. That’s a key objective underpinning the Goods and Services Tax (GST) reforms, alongside the much-needed simplification of the rate structure and an implicit hope of a belated consumption push, one of the top officials behind the rate rationalisation exercise told The Indian Express.

— Even before the final nod to the current round of rate tweaks, it had triggered an unintended behavioural change: the offtake of products such as consumer durables and cars seeing a marked decline, as consumers chose to wait for the promise of lower taxes to kick in, while insurance policy renewals were being delayed.

— Many FMCG dealers also refused to stock up from companies in anticipation of rate cuts. That is perhaps one reason why the Centre was keen the Council pushes through the proposal in one day flat.

— The new rates definitely would be a step in line with tackling the multiple classification disputes. Take for instance, papad, bread (branded or otherwise), that faced zero GST, but pizza bread, plain chapatti or roti used to be charged 5 per cent GST while paratha attracted 18 per cent tax.

— Now, all the Indian breads, whether it is pizza bread, khakhra, chapathi, roti, paratha, parotta or by any name, will be exempt.

— Or the case of various categories of popcorn – salted, regular, salted and spiced, and caramelised – that faced GST rates of 5 per cent, 12 per cent or 18 per cent and now all would be at a uniform rate of 5 per cent.

— For instance, GST has been reduced to 5 per cent for packaged namkeens, bhujia, sauces, pasta, instant noodles, chocolates, coffee, preserved meat, cornflakes, butter, ghee, in what seems to be a push towards packaged, higher quality products.

— “That 1 rupee rate for a sachet captured more market base than a Rs 20 shampoo bottle. And, the consumption even turned much more favourable for sachets as people realised its utility is much more because the 1 rupee sachet could be used multiple times. This led to consumption pattern changes,” the official said.

— The tax reduction on small cars and small capacity motorcycles will definitely be a boost to the automobile sector, especially in a segment where sales have been flagging over the last 24 months.

— Large engine capacity motorbikes – those above 350 cc that used to attract an effective tax rate of 31 per cent earlier (28 per cent GST and 3 per cent cess) – will now be taxed at 40 per cent, effectively putting them in the same category as “sin goods”, like tobacco and pan masala.



— The rationalisation of GST on air-conditioners and televisions from 28 to 18 per cent could directly boost consumption, especially going into the festive season. This also seems to factor in the reality of ACs becoming more ubiquitous now.

— The immediate impact of the GST rate cuts will be lower prices, which will then incentivise higher purchases by households. Economists think India's headline retail inflation rate could ease by 100 bps or more if companies fully pass on the tax benefits to consumers. ICICI Bank, for instance, sees the overall impact on CPI inflation at 110-120 bps.

— It's not just the tax cuts themselves that will encourage buying. According to Madhavi Arora and Harshal Patel of Emkay Global Financial Services, the end of the compensation cess from September 22 – except for tobacco and related products – will be a “de-facto demand boost for the economy”.

— The government expected to collect Rs 1.67 lakh crore as compensation cess in the current fiscal. This, however, is to be strictly used to repay the Rs 2.69 lakh crore it had borrowed in the pandemic-hit 2020-21 and 2021-22 to bridge the shortfall in cess that was being used to compensate states for weak revenue growth.

— Aditi Nayar writes: GST rationalisation is a welcome and well-timed move. Its positive implications for consumer demand and producer sentiment will help to absorb a portion of the negative impact of US tariffs and penalties. Private sector capex decisions may get a boost for domestic consumption-oriented sectors.

— However, exporters may still feel jittery about embarking on fresh capex. The revenue foregone will need to be offset through other streams or expenditure rationalisation. The final size of the fiscal stimulus remains to be gauged.

**Do You Know:**

— Compensation cess was introduced to help states make up for the revenue they lost during the initial 5 years of GST implementation. This came under the GST (Compensation to States) Act, 2017. Subsequently, its levy was extended till March 2026, to service the loans raised during the Covid years for providing GST compensation to the states.

— FM said that, “ Pan masala, cigarettes, gutkha, and other tobacco products such as chewing tobacco, products like zarda, unmanufactured tobacco and beedi will continue at their existing rates of GST and compensation cess, where applicable, until the loan and interest payment obligations under the compensation cess account are completely discharged.”

— She said after the loan repayments are met, there will not be any cess and those items that attracted the compensation cess will attract a special rate of 40 per cent.

**BANKS LOOK BEYOND CREDIT SCORE TO EXTEND LOANS TO FIRST-TIME BORROWERS**

Following the government and the RBI's fresh push for banks to sanction loans to new-to-credit (NTC) customers without established credit bureau scores, lenders have started turning to alternative data sources for sanctioning loans to first-time borrowers.



Banks are increasingly using alternative data sources—such as utility and telecom bill payments, UPI transactions, and e-commerce activity—to assess and extend loans to new-to-credit (NTC) customers who lack established credit histories. According to Rajneesh Karnatak of Bank of India, only 16% of NTC loans in FY25 were provided by banks, with the majority handled by non-bank lenders, primarily due to insufficient structured data rather than risk aversion. Credit bureau scores have a limited influence on banks' lending decisions, accounting for just 15-20% of the assessment, depending on the loan type. Recent clarifications from the Union Ministry of Finance and the RBI confirm there is no minimum credit score required for NTC customers, allowing lenders discretion within regulatory guidelines. Industry experts note a growing reliance on digital payment data, employment stability, and bank cash flow—often accessed through consent-based frameworks—to evaluate first-time borrowers.

## THE SCRAMBLE FOR FERTILISERS

India has had a very good southwest monsoon this time, with cumulative rainfall during June-August at 6.1% above the historical average or normal for these three months. The rains have, moreover, been temporally and spatially well-distributed.

— The monsoon's timely arrival and progress has resulted in farmers planting more area under kharif crops this year. As on August 22, they had sown 420.4 lakh hectares (lt) under rice, 7.6% up over the 390.8 lh for the corresponding period (from June) last year. The other crop to have posted a notable acreage jump, from 83.6 lh to 93.3 lh or 11.7%, is maize.

— When the monsoon is good – rains ensure adequate soil moisture, apart from filling up reservoirs and recharging groundwater tables – farmers not only plant with gusto, reflected in higher acreages. They also buy more fertilisers supplying nutrients – such as nitrogen (N), phosphorus (P), potassium (K) and sulphur (S) – that are as essential for plant growth as water and sunlight.

— While fertiliser demand has substantially gone up, there has been no commensurate supply increase.

— The effects of supply shortfalls were truly felt in July-August, which are the peak consumption months for kharif crops.

— Given this pattern of consumption, it's not surprising that news reports and videos of farmers standing in serpentine queues to procure their bare minimum requirement of urea bags were in wide circulation from late-July.

— The government probably underestimated the increased demand for fertilisers during this kharif, particularly on account of rice and maize.

— Both these are high nitrogen-consuming crops requiring three bags or more of urea per acre. This is unlike soyabean and pulses, which are naturally nitrogen-fixing and require hardly a bag of urea as a basal dose. As farmers expanded rice and maize acreages, while simultaneously planting less under soyabean and pulses, it has translated into additional demand.

— With the peak fertiliser consumption period for kharif over, the government will now have to plan supplies for the upcoming rabi winter-spring cropping season.



## SEMICON INDIA 2025: FOR CHIP PUSH, PM MAKES REFORM PITCH TO INVESTORS

Announcing that his government was working on the “next phase” of the India Semiconductor Mission, Prime Minister Narendra Modi on Tuesday said “the day is not far when India’s smallest chip will drive the biggest change in the world”.

— Speaking at the inauguration of ‘Semicon India 2025’, Modi made a strong pitch to global investors, citing single-window clearance, plug-and-play infrastructure model for semiconductor parks, skilled worker pool, production-linked incentives, design-linked grants, and end-to-end capabilities.

— Modi’s reference to the next phase of the mission could signal the start of a second comprehensive incentive package to drive the country’s aspirations in the chip space, which it sees as a major economic driver.

— The PM also said that as part of the next incentives for designing chips in the country, the government would stress on creating intellectual property that could be accrued to India.

— Under the first phase of the scheme, which was launched in 2021 with a financial outlay of Rs 76,000 crore, India has approved 10 semiconductor plants, including two fabrication facilities and eight packaging and testing facilities.

— The Indian Express had earlier reported that the next phase could be worth \$15 billion, with incentives for capital goods and raw materials industry as well.

— Saying that the global semiconductor market is reaching \$600 billion, and is set to cross \$1 trillion in the next few years, he said: “With the speed at which India is progressing in the semiconductor sector, it is going to have a significant share in this \$1 trillion market”.

— The PM had earlier announced that the first commercial Made-in-India chip would be available in the market, and Murugappa Group’s CG Semi is expected to make the first chip from its pilot line.

— Ashwini Vaishnav writes: Just as steel is the base for building factories, bridges, and railways, semiconductors are the base for the digital economy. Without chips, there can be no modern communication, no data processing, no AI, no renewable energy systems, and no secure defence.

— The recent focus on rare earth magnets is a stark reminder of how control over critical resources can shape global power. Similarly, semiconductors have become a crucial resource of the digital age.

— Start-ups are energising India’s chip design ecosystem with strong government support. Mindgrove Technologies is developing IoT chips built on the indigenously developed SHAKTI processor from IIT Madras.

— Global leaders are also investing in India’s talent. Lam Research is going to train 60,000 engineers in India. Applied Materials, AMD, and Microchip are committing \$1.1 billion for R&D. Partnerships with IISc, IITs, and others are ensuring a strong lab-to-fab workforce.

— Bharat’s semiconductor journey is part of the larger vision of PM Modi. It began with Digital India, a mission that built digital infrastructure and empowered citizens. The India Stack, UPI, Aadhaar, and our telecom networks gave every Indian access to technology at their fingertips.



**Do You Know:**

- Most modern-day semiconductors are integrated circuits, also referred to as ‘chips’ — essentially a set of minute electronic circuits comprising transistors and diodes, as well as capacitors and resistors, and the myriad interconnections between them, layered on a wafer sheet of silicon.
- Fabs are the highly specialised semiconductor manufacturing facilities that print the miniaturised integrated circuits from the chip design into the silicon wafers.
- The fabrication process is intricate and requires clean rooms designed to maintain sterile conditions to prevent contamination by air particles.
- There could be between 500 and 1,500 steps in the overall manufacturing process of semiconductor wafers, requiring multiple inputs that include silicon wafers, commodity chemicals, speciality chemicals, and other infrastructural prerequisites such as clean water supply and uninterrupted power supply.

**PM MODI RECEIVES FIRST MADE IN INDIA VIKRAM 32-BIT CHIP**

Union Minister for Electronics & Information Technology Ashwini Vaishnaw presented Prime Minister Narendra Modi a memento containing the ‘Made in India’ Vikram 32-bit Processor Launch Vehicle Grade chip at the Semicon India 2025 on Tuesday.

The microprocessor chips were designed and developed by the Vikram Sarabhai Space Centre of the Indian Space Research Organisation (ISRO) and the Semiconductor Laboratory (SCL), Chandigarh.

Utilised for space flights, it is an advanced refurbished version of the indigenously designed 16-bit VIKRAM1601 microprocessor, which has been used in the Avionics system of ISRO’s launch vehicles since 2009.

Other than the ‘Made in India’ chip, the memento also contained 31 more prototype chips created by academic institutions including IIT Jammu, IIT Roorkee, IIT Dhanbad, NIT Durgapur, NIT Calicut and IIT Ropar, among others.

In his address at the annual semiconductor conference, the Union Minister overseeing technology observed that in the three-and-a-half years since the inauguration of the Indian Semiconductor Mission “the world is looking at India with confidence”.

Elaborating on India’s progress in the realm, Mr. Vaishnaw said construction of five semiconductor units was going on at a rapid pace, with the pilot line of one unit completed.

**DECODING THE SC ORDER ON REGULATORY ASSETS**

**The story so far:**

The Supreme Court recently directed State Electricity Regulatory Commissions (SERCs) and distribution companies (DISCOMs) to clear existing regulatory assets within four years and liquidate any new assets within three years. The court also advised capping the regulatory asset at 3% of a DISCOM’s Annual Revenue Requirement (ARR) and instructed regulators to set out



transparent roadmaps for recovery, along with conducting intensive audits of DISCOMs that continue without recovering these assets.

#### **What are regulatory assets?**

Regulatory assets constitute the unrecoverable revenue gap due to the difference between the Average Cost of Supply (ACS), the expense incurred by a DISCOM to deliver a unit of electricity to consumers, and the ARR, which is the revenue collected by the DISCOM as consumer tariffs and subsidy payments from the government. If the ACS is greater than the ARR, the DISCOM effectively makes a loss on the sale of every unit of electricity. For instance, if a DISCOM's ACS is ₹7.20/unit and ARR is ₹7.00/unit, the gap is ₹0.20 per unit. If the DISCOM supplies 10 billion units, the total shortfall is ₹2,000 crore. To avoid suddenly burdening consumers with an immediate tariff increase to recover the gap, SERCs allow the DISCOM to record the gap as a regulatory asset. This is essentially a deferred cost that the DISCOM is entitled to recover from consumers in the future, usually with interest.

#### **What explains the ACS-ARR gap?**

Non-cost reflective tariffs, delays in the release of subsidies (for agriculture or low-income households) by State governments, and sudden increases in fuel prices (leading to increased power purchase costs) are some of the reasons that contribute to this gap.

The Punjab SERC provides one of the earliest documented cases of regulatory assets in India when it identified a revenue gap of ₹487.10 crore. Of this, ₹150 crore was converted into a regulatory asset, to be recovered over two years: FY 2004-2005 and FY 2005-2006. The remainder, ₹337.10 crore, was allowed to be recovered immediately via tariffs in FY 2003-2004. The Delhi ERC's true-up of FY 2022-23 and ARR for FY 2024-25 order mentioned a regulatory asset of ₹36,057 crore for BSES Rajdhani and ₹22,040 crore for BSES Yamuna, apart from a closing revenue gap (including carrying cost) of ₹8,226.87 crore for Tata Power Delhi Distribution Ltd. In Tamil Nadu, regulatory assets reported in FY 2021-2022 were ₹89,375 crore, indicating the issue is systemic, reflecting financial pressures across many State DISCOMs.

#### **How are consumers affected?**

If the regulatory assets reported by BSES Rajdhani, BSES Yamuna, and Tata Power, the DISCOMs operating in Delhi, are to be recovered within the four-year window set by the Supreme Court, they need to recover about ₹16,580 crore a year. With Delhi's annual electricity consumption of 30 billion units, this works out to an additional ₹5.5 per unit on average.

Since consumers can't be burdened with such high and immediate tariff increases, the State employs regulatory assets. However, the immediate benefit of stable tariffs for consumers is eventually offset by steeper increases when the deferred costs are recovered. Since these assets also attract carrying costs, consumers pay the original gap as well as the additional interest.

For DISCOMs, the persistence of large regulatory assets results in significant cash flow pressures. Because revenue doesn't cover current costs, DISCOMs often struggle to pay power generators on time. Many DISCOMs borrow to bridge the gap, increasing their debt burden. With so much money tied up in unrecovered costs, their ability to invest in modernising the grid, integrating renewable energy, and in better consumer services becomes limited. The result is a vicious cycle in which financially distressed DISCOMs face greater operational challenges, which in turn make it harder to improve efficiency and recover costs on time.



### How can ACS-ARR gap be bridged?

One important step is to ensure tariffs are aligned more closely with costs, while using targeted subsidies to protect vulnerable consumers. This ensures the burden is shared transparently rather than hidden in deferred recoveries.

State governments also need to release subsidies on time so that DISCOMs aren't left carrying the financial gap on their books. Automatic fuel cost adjustment mechanisms, such as the fuel and power purchase cost adjustment mechanism, can help tariffs respond quickly to sudden changes in input costs. Regular annual true-up exercises, where projected and actual expenses are reconciled, can prevent the build-up of large backlogs.

Finally, regulatory commissions play a critical role in maintaining discipline. By enforcing limits, ensuring transparency in accounting, and setting clear timelines for recovery, they can ensure regulatory assets remain an exceptional tool rather than a recurring feature. The Supreme Court's intervention is therefore a call for coordinated action and greater financial discipline across the sector, so that electricity remains both affordable for households and sustainable for utilities.

### ON CALL 24/7: A SPOTLIGHT ON GIG WORKERS WHO ARE RUNNING THE NEW ECONOMY

The 2022 Hindi movie *Zwigato* directed by Nandita Das sensitively captures the impact of the changing business landscape in the country. Through the life and job of a food delivery agent, the film delves into the harsh realities of the gig economy underlining the pressures of gig workers to meet targets, their low wages and job insecurity.

Struggles and courage that characterise the gig economy make compelling narratives. Today we can get a cab at our doorstep in five minutes, groceries arrive in 10 and pizza in 20. Behind each of these promised deliveries are real humans racing against time and struggling to stay afloat against the algorithm.

If Das mirrors the tough life of a gig worker, author Vandana Vasudevan in her breezy book, *OTP Please: Online Buyers, Sellers and Gig Workers in South Asia* (Penguin Random House, 2025) splits the narrative by showcasing the emotions of multiple stakeholders across the Indian subcontinent.

The movie and the book highlight problems that lay bare corporate greed, disparity of income, the anger, anxiety and isolation of millions whose lives have changed due to the pervasive influence of technology on consumption patterns.



## LIFE AND SCIENCES

### SHELL STRUCTURE: STARS AS ONIONS

#### WHAT IS IT?

For more than half a century, astrophysicists have described the lives of massive stars in terms of shells. As these stars age, they fuse progressively heavier elements in nested layers: hydrogen on the outside, then helium, carbon and oxygen, neon and magnesium, and silicon and sulphur, until they're left with an inert iron core. This model is a cornerstone of stellar evolution theory but has largely remained a theoretical construct. Observational evidence of the outer shells has emerged in certain kinds of stripped-envelope supernovae and Wolf-Rayet stars but the deeper layers have stayed out of sight.

A new study in Nature has reported a breakthrough. Using data from the Zwicky Transient Facility and follow-up studies with ground-based telescopes, an international team observed a supernova, SN 2021yjf, whose light carried the fingerprints of silicon and sulphur.

These elements are formed only in the inner shells, just outside the iron core. Their presence in the circumstellar material indicated that the progenitor star had been stripped down almost to its innermost layers before exploding.

This observation has twofold importance. First, it offers rare direct confirmation that the concentric shell structure of massive stars extends all the way inward, not just to the outer hydrogen or helium. Second, it represents the discovery of an entirely new class of supernova, now called Type Ien, defined by their silicon- and sulphur-rich signatures. Such events appear vanishingly rare: in six years of continuous sky monitoring, only one has been found.

### A VESSEL FOR TOMORROW

On a humid Texas evening on August 26, after many weather delays and ground system hiccups, the world's largest rocket finally rose from its pad as part of Flight 10. The 379-foot-tall Starship survived launch, nailed important checkpoints, and splashed down as planned. It was a technical success as well as a kind of personal vindication for a vehicle often introduced to the world less like an unthinking machine than like the protagonist of an unfolding saga.

Starship's first nine flights inched forward through explosions, abrupt cut-offs, and shredded prototypes. In January and March this year, two upper-stage Starships failed within 10 minutes of launch. A third attempt in May flew further but ended with the spacecraft breaking apart during reentry. In June, another Starship detonated on a test stand, scattering wreckage and doubts in equal measure. For a lesser vehicle, such missteps might have been fatal to funding or public patience.

On its 10th attempt, Starship finally strung together a complete act. Its Super Heavy booster executed a controlled splashdown in the Gulf of Mexico. More impressively, the upper stage, the Starship itself, deployed eight Starlink satellite simulators, successfully reignited a Raptor engine in space, and endured a reentry stress-test despite losing a piece of its aft skirt. Sixty-six minutes after liftoff, it struck its Indian Ocean target in a near-bullseye.



To watch Starship is to anthropomorphise it almost by necessity. It's too large, too ungainly, and too audacious to remain an abstract engineering project. Each launch has been a public performance. Starship has insisted on a kind of charisma that's inseparable from SpaceX owner Elon Musk's personality. Musk has cast Starship as the vessel of a civilisational destiny: building out Starlink's satellite megaconstellation, returning astronauts to the moon, and settling Mars. In his vision, Starship is a pioneer.

Yet, no protagonist is without flaws, and Starship's mirror reflects Mr. Musk's impatience. The vehicle still hasn't reached orbit. Its heat shield remains unproven, its orbital refuelling plans entirely theoretical, and its environmental footprint contested in public hearings. Mr. Musk himself has admitted that no one has ever attempted propellant transfer on the scale Starship will require. Critics point to the risks of iterating at breakneck pace: Starship's growth has paralleled fiery test-stand accidents, infrastructure damage, and regulatory friction.

### Rhetoric and reality

Beyond the engineering, there's the question of strategy. Mr. Musk speaks of Mars as if timelines bend to vision, yet the company still fights to master the earth's upper atmosphere. Each delay has reminded observers how far the rhetoric stretches beyond the horizon. Still, Flight 10 has shifted the narrative. For the first time in months, Starship isn't just a dream of what it might become but evidence of what it can do. The next versions — V3 and V4, even taller and more powerful — are already in the works. Mr. Musk has promised Mars attempts by 2026, with cargo landings on stripped-down Starships. By 2028 or 2029, if his schedule holds, Starship may try to deliver infrastructure for a permanent Martian presence.

In the meantime, the global industry watches. Competitors in China, Europe and India are studying reusable heavy-lift concepts, and smaller launch firms are recalibrating their ambitions. Starship's success, however partial, threatens to reset the playing field. If it works, payload prices could fall dramatically, satellite fleets would expand, and lunar missions might multiply. If it fails, the gap it leaves may swallow years of planning and trust.

Ultimately, the flavour that lingers of Starship Flight 10 is bittersweet ambition, a sense that in chasing Mars, Starship is dragging the entire industry towards a future thrilling and perilous in equal parts. To watch it fly is to feel the world's spaceflight enter a new register, one that mixes audacity with anxiety. If rockets are characters, Starship is the brash giant whose next act could redefine the plot.

## SWEDEN'S FOREST BASE IS KEY TO EUROPE'S ENTRY INTO SPACE RACE

Deep in the Swedish forest, where reindeer roam and scientists ski in winter, lies one of Europe's hopes for a spaceport that can ultimately compete with the United States, China, and Russia.

For decades, Europe has relied on the US for its security among the stars. But the Trump administration's "America First" policies plus a commercial market that's growing exponentially have prompted Europeans to rethink their approach.

The state-owned Esrange Space Center in Kiruna, Sweden, is among the sites building out orbital rocket programs to allow Europe to advance in the global space race and launch satellites from the continent's mainland. Currently, Europe's only space base capable of launching rockets and satellites into orbit is in French Guiana, an overseas department of France in South America that's



roughly 500 km north of the equator. Otherwise, Europe borrows NASA's Cape Canaveral in Florida.

During a speech in February at the Munich Security Conference, U.S. Vice President J.D. Vance warned Europe against continuing to rely on the U.S. and urged officials to "step up in a big way" to provide for the defence of the continent.

Vance's remarks, as well as concerns over tech billionaire Elon Musk's politics potentially affecting Ukraine's dependence on his Starlink satellite system in its war with Russia, alarmed European leaders.

It became clear to them that the continent must have its own space ecosystem, with its "own capabilities to really be able to react with (its) own means and under (its) own control," Hermann Ludwig Moeller, director of the European Space Policy Institute, said.

In March, Isar Aerospace launched the first test flight of its orbital launch vehicle from the Andøya Spaceport, another site on an island in northern Norway. Moeller believes a successful orbital launch from continental Europe could occur within the next year, though he won't guess where. Portugal, Spain, Italy, Germany, and the United Kingdom are also among the countries seeking to be part of Europe's spaceport portfolio.

Esrang and Andøya date back to the 1960s, and much of their space-bound appeal stems from their far-north geography on the earth.

Esrang is owned and operated by the Swedish Space Corporation and based more than 200 km north of the Arctic Circle. The space center's 30-plus antennas can more easily communicate with satellites orbiting the North Pole compared to infrastructure that's near the equator.

Most important, perhaps, is its size. The base itself encompasses 6 sq. km, where experts conduct Martian lander parachute tests, suborbital rocket launches, and stratospheric balloon experiments.

But its key selling point is Esrang's rocket landing zone: 5,200 sq. km of birch, pine, and spruce trees spread north across the Swedish tundra, nearly to the Norwegian and Finnish borders.

The territory is uninhabited besides the Sami Indigenous reindeer herders. Andøya's remote location on a Norwegian island, meanwhile, means rockets can safely crash down into the sea without risking harm to humans.

#### HOW MAJORANA PARTICLES PROMISE TO SHIELD QUANTUM COMPUTERS FROM NOISE

In the race to make quantum computers practical, scientists have found themselves drawn to some of the strangest ideas in physics. Few are stranger — but also more promising — than the notion of using particles that are their own antiparticles to store and manipulate information. This is the concept behind Majorana particles.

In the 1930s, the Italian physicist Ettore Majorana proposed a particle that, unlike the electron or proton, would be indistinguishable from its antimatter counterpart. In most cases, matter and antimatter are exact opposites. If you bring them together, they annihilate in a flash of energy. But a Majorana particle is a perfect mirror of itself: if you turn it inside out and reverse every charge and property, you get the very same thing you started with. This is not true for electrons or protons.



For decades, this symmetry seemed the stuff of theory alone. High-energy physicists searched for Majoranas in cosmic rays and particle accelerators but revealed nothing conclusive. Then, more recently, condensed matter physicists found a loophole: certain “quasiparticles” inside specially designed materials behave mathematically like Majoranas. These quasiparticles aren’t elementary particles from nature’s catalogue but collective excitations — like ripples in an electron sea — that follow the same unusual rules. They may emerge, for example, at the ends of tiny superconducting wires cooled to near absolute zero, under the influence of a magnetic field.

The fact that these Majorana-like modes could exist in a tabletop experiment electrified the quantum computing community. That excitement was not because they are rare, beautiful oddities (indeed they are) but because of the prospect that they might solve one of quantum computing’s hardest, most stubborn problems: keeping quantum information stable.

### First line of defence

What plagues a quantum computer? A qubit, the quantum analogue of the bit in your laptop or smartphone, can exist in a superposition, or a blend, of ‘0’ and ‘1’ at the same time. This strange property, along with entanglement between multiple qubits, is what gives quantum computers their potential power. But a qubit’s state is almost absurdly delicate. If a qubit interacts with the surrounding world, like say some stray heat or light, its superposition can “collapse,” forcing the qubit into a definite 0 or 1 and erasing the information it held.

This process, called decoherence, is relentless. In today’s most advanced superconducting quantum chips, qubits can last microseconds to milliseconds before decohering. That may sound long, but for a computer that must carry out thousands or millions of operations in sequence, it is too brief. To cope, engineers use quantum error correction, which encodes one logical qubit into a bundle of many physical qubits. The redundancy allows the computer to detect and fix errors on the fly, but it comes at a cost: hundreds or thousands of physical qubits may be needed to sustain just one logical qubit. This is the bottleneck. If there were a way to make qubits inherently more resistant to errors and protect their quantum state at the hardware level, the whole enterprise would become far more efficient.

This is where Majoranas offer a radically different approach. Imagine a qubit not as something stored in a single, fragile object but as a property that two widely separated pieces share. This is possible with Majorana modes. In certain superconductors, electrons form bound pairs, but in the right conditions, the quantum state of one electron can, in effect, be split in two. Each half behaves like a Majorana mode.

Crucially, these two halves can be placed far apart along the same nanowire or in different regions of a device. Together they define a single qubit, but the information about whether that qubit is in state 0, 1, or a superposition of both is stored in the combined state of both Majoranas. If a disturbance affects one of them — say, a bit of local noise or a defect in the material — it can’t by itself destroy the encoded information. Both halves will have to be disrupted in a correlated way, and that is far less likely.

This nonlocal encoding is the first line of defence. It’s as if you wrote the first half of a secret in one notebook kept in Paris and the second half in another locked away in Tokyo. Stealing one notebook doesn’t reveal the secret: you must have both.



### Weaving braids

The protection does not end there. Majorana modes also belong to a rare class of quantum objects called non-Abelian anyons. To appreciate what this means, it helps to step back and think about how particles normally behave when you exchange their positions.

In our everyday world, swapping two identical oranges changes nothing at all. In the quantum world, identical particles fall into two well-known categories. Bosons (e.g., photons) do not change their overall wavefunction when swapped. Fermions (e.g., electrons) change only by a minus sign, a mathematical quirk that still leaves most observable properties untouched.

Non-Abelian anyons are different. If you exchange, or “braid,” two of them, the joint quantum state changes in a much deeper way. The swap doesn’t just multiply the state by a constant; it transforms it into an entirely new state. What’s more, the order in which you do these swaps matters. Swap particle A with particle B, then swap B with C, and you end up with a different final state than if you had swapped B with C first, then A with B.

This is alien to ordinary intuition. Imagine three dancers on a stage who change the choreography of their whole performance based on the sequence in which they pass each other, not just on whether they pass.

The fact that Majorana modes are non-Abelian opens up a new way to perform quantum computation. In a suitable device, you can physically move these modes around each other, tracing out paths in space and time. This process is called braiding because if you draw the paths, they look like strands in a braid.

Each braid corresponds to a specific transformation of the quantum state shared by the Majoranas. The beauty is that the outcome depends only on the topology of the braid — the abstract over-and-under pattern — and not on the exact physical details of the motion. You could move them slowly or quickly, take a detour around an impurity in the material, or shake them gently as you go. The result would be the same as long as the braiding pattern itself is preserved.

This property makes computations built from braiding topologically protected. In practical terms, that means small errors in timing, position, or environmental noise are unlikely to derail the computation. Nature itself ‘rounds off’ the imperfections, the way a knot remains a knot no matter how you twist the rope, until you actually untie it.

### Pushing the frontiers

In principle, a topological quantum computer could be programmed simply by moving its Majorana modes through a prescribed sequence of braids, each one implementing a logical operation. The machine’s robustness would come not from layers upon layers of error-correcting qubits but from the fundamental physics of the particles themselves.

Contrast this with today’s leading quantum computing platforms: superconducting qubits, trapped ions, and spin qubits in semiconductors. In all these systems, operations must be controlled with exquisite precision, and any environmental disturbance must be suppressed as much as possible. The qubit states are localised, so an unwanted jolt or fluctuation at that location can flip or randomise the qubit. The protection comes entirely from engineering discipline and active error correction, both of which require enormous complexity.



With Majorana-based topological qubits, the hope is that much of that complexity is unnecessary. Because the information is stored nonlocally and manipulated by braiding, the qubit's essential properties are shielded from small-scale noise. This does not make them invincible — there are still ways errors can creep in, such as through quasiparticle poisoning or imperfect isolation — but the baseline stability could be orders of magnitude better.

The catch is that the promise is still mostly theoretical. Experiments over the last decade have produced tantalising signals consistent with the presence of Majorana modes — in nanowires made of materials like indium antimonide, coupled to superconductors, under a magnetic field. Measurements of the electrical conductance at the wire's ends have shown patterns that fit the predictions for Majoranas. But sceptics point out that other, more mundane effects can mimic these patterns.

The ultimate proof would be to demonstrate braiding: to move the modes around each other and show that the system's quantum state changes in exactly the way non-Abelian statistics predict. This is a delicate task. The modes have to be moved without losing their identity, kept well-isolated from ordinary electron states, and manipulated in two dimensions, even though most current devices are effectively one-dimensional wires. Researchers are currently designing more complex geometries to make braiding feasible.

If successful, Majorana-based qubits could change the economics of quantum computing. Instead of needing a million physical qubits to get a few thousand logical ones, a machine might operate with far fewer qubits, each naturally robust. The hardware could be simpler, the error-correction overhead smaller, and the computations faster and more reliable. This would not just accelerate the arrival of practical quantum computers, it could also open the door to computations that are currently out of reach because of noise and instability.

It's also worth noting that the pursuit of Majoranas has already pushed the frontiers of condensed matter physics. In trying to coax these particles into existence, researchers have learned to grow cleaner nanowires, make better superconducting contacts, and control materials at the atomic scale. Even if the ultimate prize remains elusive, the technological by-products are likely to feed into other areas, from quantum sensing to new kinds of electronics.

## WHEN GRAVITY WINS

### Why doesn't water fall in one go from a cloud?

A cloud is not a big pool of liquid water but consists of minuscule droplets (~10 microns each) and sometimes ice crystals. These particles are so small and light that they are suspended by rising air currents and turbulence in the atmosphere.

Each droplet is subject to gravity, but because it's so small, air resistance almost perfectly balances its weight. The falling speed of a 10-micron droplet is only around 1 cm/s, so it would take hours to fall through 1 km of air. Updrafts in clouds are often stronger than this.

As droplets coalesce into larger drops or as ice crystals grow and melt, their mass increases much faster than air drag. A 2-mm-wide raindrop can fall at around 7 m/s, which is faster than updrafts. Once droplets reach that size, gravity wins and the droplets fall as rain.



A bucket of water is a continuous body. Surface tension holds all the molecules together, so if you overturn it, the water pours out in a sheet. A cloud has no such cohesion: it's just a diffuse suspension of independent droplets scattered through kilometres of air.

### CAN AN AI IMAGE-TO-VIDEO FEATURE PUT CHILDREN AT RISK?

On June 22, Reddit co-founder Alexis Ohanian posted a childhood photo of his mother and himself. In the picture, both are wearing red sweaters while hugging each other against a mountain backdrop.

Alongside the image, Mr. Ohanian posted an AI-generated video that brought the picture to life: the mother and child cuddle each other as the wind ruffles their hair.

"Damn, I wasn't ready for how this would feel. We didn't have a camcorder, so there's no video of me with my mom," posted Ohanian on X (formerly Twitter). "I dropped one of my favourite photos of us in midjourney as 'starting frame for an AI video' and wow... This is how she hugged me. I've rewatched it 50 times."

The post quickly went viral, and garnered well over 20 million views. While many empathised with Mr. Ohanian's act of turning a cherished family photo into a video, he was also severely criticised. Many X users accused him of creating "false" memories, damaging his ability to grieve his mother in a healthy way, or seeking comfort in an interaction that he manufactured.

The capacity to turn images into videos is not limited to tools like Midjourney. In recent weeks, multi-billionaire Elon Musk announced 'Grok Imagine' for users to generate short videos from text/image prompts. Google, in July, rolled out 'Create' mode in its Photos app to transform photos into short videos for U.S.-based users. There are also other, smaller platforms that offer to turn users' photos into AI videos.

AI tools have been used for years to enhance old media through a process called AI upscaling: removing blurred parts, pixelation, and grain to deliver better output. While GenAI has made this process faster and easier, it also allows users to morph and manipulate images with advanced tools that can remove objects and fill in missing spaces.

The jump in technology comes with legal questions to consider, as permission is usually required before making any significant edits to a copyrighted creation. Furthermore, ethical conundrums also arise when a person manipulates a photo featuring someone who is no longer alive. Significantly, more users need to consider the impact on the photo's most vulnerable subjects — children.

#### **Children's rights and safety at risk**

For instance, cybercriminals can now rapidly create realistic AI videos of minors by using their publicly available photos with ease. In the past, criminals have targeted minors by generating synthetic nude photos of them to extort money. One such case in the U.S. led to a teenager dying by suicide. His family was not aware that the child was being harassed.

Data protection lawyer and AI specialist Kleanthi Sardeli, who works with the Vienna-based NGO noyb and advocates for consumers' digital rights, said that turning still images into video clips could be done for innocent reasons but that there are "serious implications" to consider as well.



“The lower the barriers to creating realistic content, the more we also need to think about ethics, consent and context. A photo can be turned into a convincing video without the knowledge or consent of the person depicted, increasing the risk of deepfakes, defamation and abuse,” said Ms. Sardeli, adding that the risks multiplied when photos of children were involved.

She explained that under the EU’s General Data Protection Regulation (GDPR) laws, children cannot legally consent to such use of their personal data, including their image, until they turn 16 years old.

Though experts and lawmakers have called on AI companies to enforce strong guardrails to prevent AI chatbots from generating highly pornographic media, the reality is that many chatbots easily churn out sexual content. What’s more, AI firms and their bosses are aggressively promoting their service. For instance, one specific video Mr. Musk shared that promoted Grok Imagine’s capability depicted a fantasy-style clip of a winged woman wearing very little clothing.

Across the internet, meanwhile, websites lure users with morphed porn videos, featuring celebrities, and invite users to digitally undress victims of their choice. “Beyond obvious dangers such as CSAM (Child Sexual Abuse Material), less malicious uses, such as animating a child’s photo for advertising or entertainment purposes, can also jeopardise children’s privacy, dignity and autonomy,” said Ms. Sardeli.

#### **Gatekeepers and guardrails**

The Hindu reached out to both Google and xAI about the safeguards in place on these platforms to restrict users from turning photos of children into videos, and whether there are content filters to stop photos from being turned into pornographic content or child abuse material. A Google spokesperson said that the company took child safety online seriously and that the photo-to-video capability in Google Photos could be used with only two prompts: “Subtle movements” and “I’m feeling lucky”.

Furthermore, these videos would include an invisible SynthID digital watermark, as well as a visual watermark, the company said.

“Our safety measures include extensive ‘red teaming’ to proactively identify and address potential issues, as well as thorough evaluations to understand how features can be used and prevent misuse. We also welcome user feedback on issues, which we use to make ongoing improvements to our safety measures and overall experience. We have clear policies and Terms of Service on what kinds of content we allow and don’t allow, and build guardrails to prevent abuse,” said the Google spokesperson.

“Google Photos is a place to store your memories and we want our users to be able to use its fun creative tools on photos of their friends and family, including their kids, while also prioritising safety,” the company said.

#### **xAI did not respond to a request for a statement.**

In the U.S., the National Center for Missing and Exploited Children (NCMEC) has highlighted that it is “deeply concerned” about how Generative AI was being used to sexually exploit children.

“Over the past two years, NCMEC’s CyberTipline has received more than 7,000 child sexual exploitation reports involving GAI [Gen AI], and the numbers are expected to grow as we continue to track these trends,” stated the organisation on its website.



Meanwhile, Ms. Sardeli noted that existing laws in the EU provided some safeguards but were not specifically designed with AI content in mind. This means EU child protection laws clearly prohibit explicit material, but they are less clear when it comes to synthetic media that is not overtly illegal but is still exploitative or harmful, according to her.

In India, the Ministry of Electronics and Information Technology (MEITY) has issued advisories that require platforms to remove morphed content (including AI deepfakes), and especially if the content is graphic or sexually abusive. Furthermore, platforms such as Meta, Google, and X have appointed grievance officers in India to handle complaints raised by affected users.

“AI providers are beginning to build in safeguards, like detection systems and content filters, but these are uneven across platforms and not always effective. The law is lagging behind the technology. In particular, there is no comprehensive global framework that addresses the misuse of children’s likenesses in GenAI,” explained Ms. Sardeli.

“Stronger rules around consent, transparency, and accountability are needed, along with technical standards that make it harder to misuse children’s photos.”

#### GOOGLE RULING SHOWS HOW TECH CAN OUTPACE ANTITRUST ENFORCEMENT

The rapid pace of development in the world of tech, particularly in AI, spurred a judge’s cautious approach to curbing Google’s online search monopoly, revealing a hurdle for U.S. antitrust enforcers’ efforts to win their other cases against Big Tech.

U.S. District Judge Amit Mehta ruled last year that Alphabet’s Google holds an illegal monopoly, saying its dominance in online search “has gone unchallenged for well over a decade.” But he declined on Tuesday to impose stringent requirements that the government had called for, saying the rise of AI companies in the past two years has already created competitive pressure.

He noted that tens of millions of people use generative AI programs like ChatGPT, Perplexity and Claude in nearly the same way they look for information they previously found on Google.

“Innovation is a hare while antitrust law is a tortoise,” said Adam Kovacevich, head of the Big Tech-funded industry group Chamber of Progress.

Courtney Radsch, director of the Center for Journalism and Liberty at the Open Markets Institute, an anti-monopoly group, said the ruling sends the wrong signal to the AI sector.

“It’s really problematic. Because it means antitrust as it is being wielded now is too backward-looking, and it’s not looking at how to prevent illegal anticompetitive behavior,” she said. Of the five high-profile ongoing antitrust lawsuits against Big Tech, several of which were initiated by investigations during the first Trump administration in 2019, the Google search case was seen as one of the strongest for U.S. antitrust enforcers.

Now, Big Tech companies facing antitrust lawsuits are likely to use the ruling to their advantage, said John Kwoka, an economics professor at Northeastern University.

Antitrust regulators have homed in on the tech industry because they saw it as a crucial juncture between entrenching the dominance of big players and allowing startups to thrive. The U.S. sued Google in 2020 and 2023, Meta Platforms in 2020, Amazon in 2023 and Apple in 2024, and opened probes last year into Nvidia and Microsoft. In a process that takes years, antitrust cases typically



proceed in two phases: a judge first decides whether the company engaged in anticompetitive conduct, and next tackles the question of what it should do to restore competition.

Tuesday's ruling was the first of the cases to impose requirements on a Big Tech company. Mehta largely adopted Google's proposal. "The emergence of GenAI changed the course of this case," Mehta said in the ruling, calling it "astonishing" how quickly billions of dollars have flowed in to the nascent industry.

ChatGPT was not released until 2022, two years into the case.

A year later, when Google faced its first trial on the question of whether it held a monopoly, no witness cited AI as a near-term threat to search, the judge wrote.

Now, AI companies are such a factor that the judge said they should be allowed to access Google's data to help boost competition with its search engine.

Meta Platforms and Apple are likely to highlight the ruling in their own cases. For example, the U.S. Federal Trade Commission is seeking to make Meta sell off Instagram and WhatsApp, saying the acquisitions were aimed at neutralizing upstart competitors to Facebook's supremacy in the market for platforms where users share updates with friends and family.

Meta has argued that the scene has shifted in the past five years since the case was brought, through the explosion in TikTok's popularity and users' growing preference for sharing in group chats instead of posting on social media platforms.

Apple, which faces allegations of using restrictions on third-party developers to make it harder for iPhone users to switch, has argued antitrust enforcers are threatening innovation by seeking control of its product design.

To be sure, even where judges are leery of going too far, pressure from antitrust cases has precipitated change.

## WILL GOOGLE LOSE ITS DATA MOAT AFTER LANDMARK U.S. COURT RULING?

The decision by U.S. District Court Judge Amit Mehta, compelling the Silicon Valley giant to share its search data with rivals, appears on the surface to be a significant blow. However, a deeper look into the mechanics of modern search and the trajectory of Artificial Intelligence (AI) suggests that while the landscape is changing, Google's fortress may be far from breached.

Over the past two decades, Google has become synonymous with searching the internet, so much so that "googling" has entered the global lexicon. The company reached this zenith by relentlessly refining its search engine, feeding it an ever-increasing volume of user queries and interaction patterns.

This information cemented Google's dominant position, keeping it years ahead as competitors languished. This technical superiority was reinforced by exclusive deals with device manufacturers, making Google the default search engine, pre-empting new users from ever testing alternative platforms.

Challenging this dominance, the U.S. Department of Justice (DoJ) and a coalition of states sued the Alphabet-owned company in 2020. In a pivotal moment, Judge Mehta ruled that "Google is a



monopolist, and it has acted as one to maintain its monopoly.” The court found that Google had spent billions on distribution deals to be the “out-of-the-box” search engine at all key entry points.

While the DoJ sought a structural breakup, including the divestment of the Chrome browser, the court instead ordered behavioural remedies aimed at restoring competition by lowering barriers for Google’s rivals. The centre-piece of this remedy is the requirement for Google to open its vast trove of search data to “qualified competitors,” a move designed to help them build more capable search products.

### **The old moat and the new frontier**

To understand the ruling’s true impact, one must first appreciate the architecture of Google’s dominance. It rests on two pillars: a colossal, continuously updated index of the web and an unparalleled volume of user interaction data. The index is the library and the user data is the librarian’s knowledge of which books are most useful for which questions.

Every search query, every click, every moment a user lingers on a page, and even how they refine a failed search provides a signal. This real-time feedback loop, collected from billions of devices through its default-by-design strategy, is the lifeblood that allows Google’s algorithms to learn, adapt, and deliver superior relevance.

Judge Mehta’s remedy, by forcing Google to share query and interaction data, is a direct assault on this data moat. The intention is to give competitors the raw material they need to train their own algorithms and build more comprehensive indexes. In theory, this levels the playing field. In practice, however, it may be a solution for a problem that is already being superseded by a new technological paradigm.

### **From search engine to GPT engine**

The future of information retrieval is not a list of 10 blue links — it will be a direct, synthesised answer. We are witnessing the evolution from search engines to what can be described as GPT-powered answer engines. Driven by Large Language Models (LLMs), these new systems don’t just point you to information; they understand, summarise, and generate it for you. Features like Google’s AI Overviews are the opening act of this transformation. Users are no longer just “searching”, they are engaging in a dialogue with an AI that provides a consolidated, conversational response.

In this new world, the nature of competitive advantage shifts dramatically. While the historical query data and web index that the court is ordering Google to share are valuable for building a foundational, traditional search engine, they are less critical for perfecting a generative AI-powered one. The new data is not what people searched for yesterday, but how they interact with the AI-generated answers of today.

### **Why Google’s lead is set to expand**

This is where Google’s incumbency becomes an almost insurmountable advantage. The company’s data moat isn’t just its historical archive; it is its real-time, global-scale user-testing platform. As Google rolls out AI Overviews and other generative features across its products — Search, Chrome, Android — it gains access to a feedback loop of unparalleled scale.

Every time a user accepts an AI-generated answer, refines their prompt, or clicks on a source link within an overview, they are providing a signal that fine-tunes Google’s models. This is



Reinforcement Learning from Human Feedback (RLHF) on a scale that no competitor can hope to replicate.

Rivals, even with access to Google's historical query logs, are essentially being given the blueprints to a 2020-era engine while Google is building a the next decade's answer engine. The data that truly matters for winning the AI race is the nuanced, personalised, real-time interaction data with generative models.

Google's distribution deals, while now deemed anti-competitive, have secured it the prime real estate to collect this next-generation data from billions of users.

The court's remedy may help a few competitors to build a better classic search engine, but it does little to help them challenge Google in the transition to an AI-first answer engine.

The moat, therefore, is not being drained; it is simply being re-engineered around a new, more advanced, and even more defensible technology.

#### WHY EARTHQUAKES OCCUR, WHY AFGHANISTAN IS SO VULNERABLE

An earthquake of 6.0 magnitude struck north-east Afghanistan on Sunday night (August 31), killing more than 800 people and injuring at least 2,000. The quake's epicentre was 27 km northeast of Jalalabad in Nangarhar province, and its depth was just eight kilometres.

— Afghanistan is particularly vulnerable to earthquakes. In 2023, the country's Herat province experienced three major earthquakes, which killed nearly 1,300 people and wounded around 1,700. In 2022, a 5.9-magnitude quake killed at least 1,300 people in the southeast region.

— An earthquake is an intense shaking of the ground caused by movement under the Earth's surface. It happens when two blocks of the Earth suddenly slip past one another. This releases stored-up 'elastic strain' energy in the form of seismic waves, which spread through the Earth and cause the shaking of the ground.

— The Earth's outermost surface, crust, is fragmented into tectonic plates. The edges of the plates are called plate boundaries, which are made up of faults — zones of fractures between two blocks of rock. The tectonic plates constantly move at a slow pace, sliding past one another and bumping into each other. As the edges of the plates are quite rough, they get stuck with one another while the rest of the plate continues to move.

— An earthquake occurs when the plate has moved far enough and its edges unstick on one of the faults. The United States Geological Survey (USGS) says that "the location below the Earth's surface where the earthquake starts is called the hypocenter, and the location directly above it on the surface of the Earth is called the epicentre".

— That's because shallow quakes are generally more dangerous as they carry more energy when they emerge to the surface, when compared to quakes that occur deeper underneath the surface. While deeper quakes do indeed spread farther as seismic waves move radially upwards to the surface, they lose energy while travelling greater distances. Shallow earthquakes generally have a depth of between zero and 70 km.

— Apart from the depth, the magnitude of an earthquake is also an indicator of how destructive a quake could be. Magnitude tells how big the seismic waves are, while strength refers to the energy they carry.



— Afghanistan is situated on top of a number of fault lines where the Indian and Eurasian plates meet. These plates collide often, leading to significant tectonic activity in the region.

**Do You Know:**

— Ranking as the seventh most earthquake-prone country in the world, India is vulnerable to seismic activity. India's vulnerability to earthquakes stems from its geographical position at the convergence of multiple tectonic plates, its intricate geological structure, and a rapidly growing population paired with widespread unregulated construction practices.

— According to [ndma.gov.in](http://ndma.gov.in), approximately 59 per cent of its land area is at risk of experiencing moderate to severe seismic events, capable of registering an intensity of VII on the MSK scale or higher.

**DATA SHOW SEAS RISING FASTER AROUND MALDIVES, LAKSHADWEEP THAN BELIEVED**

Rising seas are a major consequence of global warming, with many implications for low-lying coastal areas. Coral reefs, which are highly sensitive to their environment, are also particularly vulnerable to fluctuations in sea level. When the sea level rises, sunlight may no longer penetrate the water to reach a coral reef that it could reach before. This can lead to coral bleaching.

Changes in tide patterns and increasing coastal erosion can further stress reef ecosystems already bearing the brunt of warmer waters and ocean acidification.

**Significant gaps**

Monitoring sea-level rise across ocean basins has been an ongoing scientific priority. In the Indian Ocean, long-term efforts began during the Tropical Ocean Global Atmosphere programme in the Western Indian Ocean (1985-1994). These efforts were later incorporated into the Global Sea Level Observing System, which continues to support research in the region.

According to India's Ministry of Earth Sciences, the Indian Ocean's levels have been rising at around 3.3 mm/year on average, which is higher than the global average. The Ocean is also experiencing above-average warming, which can amplify changes in ocean dynamics and atmospheric circulation that in turn affect coral bleaching episodes.

This said, there are still significant gaps in sea-level records, especially in the central tropical Indian Ocean. A new study has now extended sea-level records in this region by 90 years, indicating water levels here may have started accelerating as early as the late 1950s, significantly earlier than data collected by conventional tide gauge records indicate.

**FROM LANDMINES TO TUBERCULOSIS, THESE RAT HEROES ARE TRAINED TO SNIFF OUT DANGER**

A man lies unmoving, slumped in the rubble of a simulated earthquake, as an unlikely rescuer approaches: a rat with a backpack. Whiskers waving, the rat breezes past garbage, toppled furniture and scattered clothes to find him and pull a trigger on its pack, alerting searchers above.

A survivor has been found. The search in Morogoro in Tanzania's Uluguru Mountains is over and the rat scurries out of the abandoned building to be rewarded with a banana. A successful mission is complete for this African giant pouched rat being trained for search and rescue operations.



“Their sense of smell is incredible,” said Fabrizio Dell’Anna, an animal behaviorist at APOPO, a Tanzania-based nongovernmental organisation that trains the rats for lifesaving applications. “These rats are able to detect explosives, tuberculosis — even tiny amounts of the bacteria — and in this project, they are able to correctly identify and indicate humans.”

In a field nearby, more rats walk on leashes held between handlers, pacing a grid filled with land mines as part of an initiative by APOPO, which works alongside Sokoine University of Agriculture. When they pause, it indicates that explosives are beneath. These rats are readying for their next deployment, perhaps Angola or Cambodia, where APOPO has helped clear more than 50,000 land mines since 2014.

From detecting land mines to sniffing out tuberculosis, these “hero rats” have become unlikely, and sometimes unrecognised, front-line responders in Tanzania and beyond.

For decades APOPO has trained these “hero rats,” which have one of the most sensitive noses in the animal kingdom. Since 2003, the rats have been finding land mines and, more recently, have been turned on to trafficked wildlife and earthquake survivors. The rats begin training shortly after birth for specific missions. The cost of training each rat runs around \$6,990.

It is all done with classical conditioning and positive reinforcement, explained Dell’Anna, who oversees the search and rescue program. The first cohort of this group of specialised rats are already in Turkiye with a partner search and rescue organisation.

While the rats focused on explosives or survivors buried in rubble get all the glory, it is a group of rats inside a lab that are arguably the most impactful lifesavers. These are not typical lab rats, but rather, as their proponents would argue, one of the world’s most effective detectors of tuberculosis.

Tuberculosis is an ancient respiratory disease that continues to run rampant despite centuries of research and treatment. The World Health Organization said last October in its most recent TB report that the disease had resurged as the top infectious disease killer, with 1.25 million deaths and a record 8.2 million infections in 2023. Tanzania struggles with one of the highest global TB burdens, according to the WHO.

APOPO expanded into TB detection in 2007 and its rats have been deployed in Tanzania, Ethiopia and Mozambique. The rats sniff out samples of sputum from patients, looking for positive TB cases that had been marked as negative. Research suggests the rats are picking up on six unique volatile organic compounds in positive TB samples, said Christophe Cox, the CEO of APOPO.

APOPO’s rats can scan 100 samples in 20 minutes, and since the programme’s inception, the rats have been able to identify more than 30,000 patients who had been sent home with a clean bill of health but were actually carrying TB, Mr. Cox said. The NGO is able to do with one lab what 55 hospitals do in a day, he adds. Yet using live animals in the place of medical devices poses challenges, especially when it comes to scale.

#### WHY ARE ORCAS OFFERING FRESH PREY TO HUMANS?

##### **The story so far:**

Many orcas, which are the largest species of dolphins and are often called killer whales, have been found sharing freshly killed prey with humans. And they don’t just offer their prey: they wait for



the humans to respond. In a new study in the Journal of Comparative Psychology, researchers have investigated why orcas are provisioning humans.

#### **How did the team collect data?**

While orcas are known to be prosocial animals, they rarely interact with humans. The research team collected data from the period 2004-2024 from five ocean parts: Eastern North Pacific, Eastern Tropical Pacific, Western South Pacific, Western South Atlantic, and Eastern North Atlantic. The team included only those instances in their analysis where human observers were a significant distance from the orcas before the animals approached. For example, the criterion for humans underwater at the time of provisioning was that they had to have been at least 15 m away from the killer whales before an interaction. The animals would then have come to within their own body length and release their prey in front of their bodies.

#### **Are orcas smart?**

Of the 34 instances the team was able to finalise, the orcas awaited a human response before they recovered or abandoned the offered prey and retreated in 33 instances. Their offerings included seaweed, invertebrates, fish, reptiles, birds, and mammals. Some people also reported not accepting the offering at first. Jared Towers, a marine biologist at the Bay Cetology research institute in British Columbia, Canada, was one of them. "I didn't accept the offerings because it was a shock when it happened," Mr. Towers said. "And there's only a few seconds to decide what to do. Easier just to observe." Like humans, orcas are at the top of their food chain. They also have a larger brain size relative to the size of the body. Research has linked this trait to better cognition, learning, and social behaviour. Orcas live and hunt in groups led by a matriarch, the oldest female, and the group's behaviour largely depends on the matriarch.

#### **What are the orcas doing?**

Some experts have said that the killer whales might just be playing. However, this activity is usually associated with juveniles whereas the new study found adults and juveniles alike to provision humans. Animals also play only when their own nutritional needs have already been met. The study, however, found that in half of all the instances, the killer whales were offering whole prey, not partly eaten. For these reasons, the authors said, the killer whales may have been exploring, not playing.

Animals explore their surroundings to reduce uncertainty about their physical, social, and/or environmental surroundings. Exploration is technically the conscious pursuit of knowledge and reflects the dolphins' evolved intelligence. In a few instances when humans tossed the prey back, the orcas immediately reciprocated, suggesting they were learning what humans preferred. "Some of these things are associated with play, but some of these things may also be defined as scientific thinking, which has been described as the ability to ask questions and then pursue answers," Mr. Towers said. While the animals' behaviour appeared to be prosocial and altruistic, the researchers warned that their actions could be manipulative or deceptive, for personal gain. Killer whales have been known to behave in this way to steal fish and to damage vessels.

#### **Do the findings help conservation?**

As humans and orcas interact more often, orcas are likely to adapt their behaviour to become more friendly or more hostile, depending on the female leading the group. These interactions could pique human curiosity about killer whales and potentially improve conservation efforts.



## FROM SILENCE TO SOUND: POWER OF HEARING IMPLANTS

In a country as vibrant and expressive as India, silence should never define a person's experience of life. Yet, for millions living with hearing loss, that is the quiet reality. At least 63 million Indians, around 6.3 % of the population, live with significant hearing loss according to figures widely used by India's health authorities. This number comes from earlier World Health Organization (WHO) estimates and with today's population growth, the true burden is likely even higher.

Globally, the challenge is immense. The WHO reports that 430 million people require rehabilitation for disabling hearing loss, including 34 million children. Newborn and early onset permanent hearing loss occurs in roughly 0.5 to 5 in every 1,000 infants, highlighting the need for universal newborn screening and regular checks through childhood.

### **Silence not a choice**

Too often, hearing loss is missed or misunderstood. In children, it may be mistaken for inattentiveness or slow learning. In adults, it can be dismissed as fatigue or personality change. Among older people, it is wrongly accepted as an unavoidable part of ageing rather than a treatable condition. The consequences are far-reaching, affecting education, employment, emotional well-being and social connection.

For parents, discovering that a child has hearing loss can be deeply emotional. It is not uncommon to feel overwhelmed or uncertain. Early intervention can change the trajectory of a child's development.

Advances in hearing implant technology have transformed the landscape of ENT care. These devices do not just restore hearing; they restore participation in life. Cochlear implants bypass the damaged parts of the inner ear and directly stimulate the auditory nerve, making them ideal for individuals with severe to profound sensorineural hearing loss when hearing aids no longer suffice.

Active middle ear implants provide mechanical stimulation to the ossicles or the cochlear windows. They are particularly valuable for people with conductive, mixed or selected sensorineural hearing loss, especially when ear canal conditions or intolerance make conventional hearing aids ineffective. Outcomes are consistently strong when surgery is paired with proper follow-up, including speech and auditory rehabilitation. Modern techniques are standardised, with low rates of major complications reported worldwide.

Hearing implants have the power to change lives at every stage, from children finding their voices to elderly patients reconnecting with family and society. Around the world, these devices have enabled adolescents to regain confidence in classrooms and older individuals to rediscover the joy of conversation, festivals and social interaction after years of quiet withdrawal.

### **Early detection is key**

The greatest gains come when intervention is timely. Delays often mean children face language and learning setbacks, or adults experience avoidable isolation. Building a culture of preventive hearing care is essential. This means universal newborn screening, school-based checks, routine assessments for older adults and public awareness to reduce stigma.



Hearing is not only about sound; it is about connection. It is a child answering a teacher's question. A grandparent laughing at a family joke. These moments are irreplaceable. When medicine offers us the power to preserve or restore them, no one should be left behind in silence.

## THE BRAIN FILTERS SOUND SIGNALS

**Q: Why do we not hear sounds while sleeping?**

**A:** Sleep does not mean the brain is inactive and we do hear sounds while sleeping. Sleep is a recurrent and healthy state of inertia and reduced responsiveness found among higher vertebrates. It is controlled by the brain and is associated with characteristic electrical rhythms in the brain.

The body induces this state when the central core of the brainstem situated below the cerebral hemisphere is stimulated. Likewise, stimulating the reticular formation (a portion of the central nervous system which consists of small islands of grey matter separated by fine nerve fibres bundles running in every direction) by messages from the cerebral cortex can awaken sleeping persons.

Neurons (nerve cells) in REM sleep are as alive as they are in wakefulness. Mental capacity also does not decrease. Incoming sounds are also subjected to ceaseless scrutiny. But the brain ignores the unimportant ones while the important ones, even if feeble, lead to arousal. The arousal thresholds are variable and are a function of the meaningfulness of the stimuli. When a stimulus has no significance to the sleeper, the thresholds can be rather high. So irrelevant stimuli are actively shut out during REM sleep.

Behaviourally, researchers have established that motor responses can be evoked in all stages of sleep, but it is difficult to demonstrate that new responses can be acquired during sleep.

## MICROBES THAT DIGEST PLASTIC MAY FUEL ANTIBIOTIC RESISTANCE

Plastic is cheap, versatile, and used almost everywhere, from packaging and textiles to medical supplies. But unlike natural materials, plastic doesn't simply decay; instead, it breaks down into smaller fragments called microplastics (<5 mm) and nanoplastics (<1 m).

These particles persist for decades or longer, accumulate in water bodies, and attract other pollutants like heavy metals, antibiotics, and toxic chemicals. They provide sticky surfaces where bacteria thrive, and recent research shows such surfaces can even host microbes carrying antibiotic resistance genes (ARGs). This raises fears that plastic waste may not only choke ecosystems but also help spread antimicrobial resistance (AMR).

Biodegradation offers a potential way forward. Some microbes produce enzymes capable of disintegrating the strong chemical bonds in plastic polymers. A famous example is PETase, discovered in *Ideonella sakaiensis*, which can degrade polyethylene terephthalate (PET), a common plastic used in bottles. Yet despite such exciting discoveries, natural microbial communities with this ability remain poorly understood, especially in environments where plastic pollution is constant and intense.

The Sundarbans, stretching across India and Bangladesh, is the world's largest mangrove forest and receives around three billion microplastic particles every day through the rivers that feed into the Bay of Bengal. With such heavy exposure, microbes in this ecosystem may have evolved new



ways to handle plastic waste. At the same time, because microplastics can carry antibiotics and metals, the same microbes may also acquire resistance traits.

This two-faced possibility — plastic breakdown plus resistance — is at the heart of new work by scientists at the Indian Institute of Science Education and Research (IISER), Kolkata. Published in *FEMS Microbiology Letters*, it shows that the floating bacterial community in the Sundarbans possesses the genetic tools to degrade plastics and that these tools are also linked with genes for AMR and metal resistance.

The scientists collected one litre of surface water each month for nearly a year (2020-21) from a site in the Mooriganga estuary, a branch of the Sundarbans. The water samples were filtered to capture microbial cells, and the DNA from these microbes was extracted. Using a technique called metagenomic sequencing, the researchers read the genetic material of the entire microbial community.

Then they compared the DNA sequences to specialised databases. PlasticDB was used to identify plastic-degrading enzyme (PDE) genes, while other resources helped detect ARGs, metal resistance genes (MRGs), and mobile genetic elements — pieces of DNA that allow genes to move between microbes.

The analysis revealed an impressive 838 hits for plastic-degrading enzymes, representing the ability to act on 17 different plastic polymers. Most hits (73%) targeted synthetic plastics, while the rest targeted natural polymers like polyhydroxyalkanoates. The single most abundant set of enzymes was those breaking down PEG, suggesting a strong contamination input from biomedical and industrial sources.

The PDEs were more abundant during the monsoon. “HpB reflects the occurrence of PDEs and ARGs per season,” IISER Kolkata biologist and study coauthor Punyasloke Bhadury said this is because “freshwater flow from inland to the coast during monsoon brings in nutrients, bacteria, and other materials including microplastics.”

Crucially, however, the study found that microbes carrying PDEs also often carried resistance genes. Genes for zinc resistance and for resistance to aminoglycoside antibiotics were particularly common among plastic degraders. A co-occurrence network analysis revealed strong associations between PDEs, ARGs, and MRGs, hinting that the same selective pressures — plastic additives, metals, and pollutants — are shaping microbial adaptation.

On one hand, the discovery of such a diverse and abundant set of plastic-degrading enzymes is promising. It shows the Sundarbans’ microbial community has already adapted to deal with the flood of plastic waste, potentially offering natural solutions to one of the world’s most pressing environmental challenges.

On the other hand, the very microbes capable of breaking down plastics are also reservoirs of antibiotic and metal resistance genes. If such microbes were deliberately released or enriched in natural settings, they may contribute to the spread of resistance traits, undermining efforts to control AMR. In fact, plastics themselves may serve as hotbeds where resistance genes accumulate and spread between microbes through horizontal gene transfer. This makes the application of plastic-degrading microbes more complicated than it first appears.



“Changing climate can potentially accelerate the transfer of ARGs among bacteria, which may ultimately end up in humans,” Mr. Bhadury said. “This could have consequences for One Health and public health in general.”

#### OVER A BILLION PEOPLE LIVING WITH MENTAL HEALTH CONDITIONS GLOBALLY: WHO

Suicide accounts for one in every 100 deaths globally. According to new data released by the World Health Organisation (WHO), an estimated 727,000 people across all ages lost their lives to suicide in 2021, with one suicide death happening in over 20 suicide attempts. The WHO further says that more than a billion people are living with mental health disorders.

— The new findings were published in two reports – ‘World Mental Health Today’ and ‘Mental Health Atlas 2024.’ Over the next few weeks, WHO will also be releasing country profiles as part of ‘Mental Health Atlas 2024,’ the first after Covid and factors in after-effects of the pandemic.

— The most common mental disorders are anxiety and depressive disorders, which together accounted for more than two-thirds of all mental health conditions in 2021. Between 2011 and 2021, the number of people living with mental disorders increased faster than the global population.

— As a result, the global age-standardized point prevalence of mental disorders reached 13.6 per cent, which is 0.9 per cent higher than a decade ago.

— Younger adults aged 20–29 years are estimated to have the largest increases (1.8 per cent) in prevalence since 2011. Males are estimated to more commonly have attention-deficit/hyperactivity disorder (ADHD), autism spectrum disorders, and idiopathic disorder of intellectual development (comprising intellectual disability from any unknown source).

— Females are estimated to more often experience anxiety, depressive and eating disorders. Anxiety disorders typically emerge earlier than depressive disorders, which are rare before ten years of age.

— After the age of 40 years, depressive disorders become more prevalent than anxiety disorders, peaking between ages 50 and 69 years.

— Suicide is the leading cause of death among young people across all countries and socio-economic contexts. Yet, progress in reducing suicide mortality is too low to meet the United Nations Sustainable Development Goal (SDG) of a one-third reduction in suicide rates by 2030.

— Given current status, only a 12 per cent reduction will be achieved by that deadline, according to estimates in the report.

— The challenge is a huge scarcity of trained mental healthcare personnel, including nurses, social workers, psychiatrists, psychologists, counsellors and other paid mental health workers.

— For mental health management to be streamlined, the chain of care must be carefully established. “This means availability of professional help, continuity and availability of treatment and medicines and economic conditions to cope with the financial load.



**Do You Know:**

— The Government has released the National Suicide Prevention Strategy in November, 2022. The National Strategy for Suicide Prevention provides a framework for multiple stakeholders to implement activities for prevention of suicides in India.

— This national strategy aims to reduce suicide mortality by 10% in the country by 2030. The national strategy includes an action framework with proposed actions with key stakeholders, implementation framework and mechanism, thus providing a path forward for preventing suicides.

— According to the annual report of the National Crime Records Bureau (NCRB), released in August, 1.64 lakh people died by suicide in 2021 — an increase of 7.2 per cent from 2020. This is 10 per cent higher than the COVID deaths (1.48 lakh) in India in 2020, and 6.8 times the maternal deaths (23,800) in the same year.

— The NCRB report also stated that more than 1,00,000 people die by suicide in the country every year. A total of 25,891 suicides were reported in the 53 megacities of the country during 2021, with the highest in Delhi.

— In August 2025, Supreme Court issued 15 binding directions applicable to all schools, colleges, hostels, and coaching centres across the country, aimed at institutionalising mental-health support and safeguarding the psychological well-being of students.

— The verdict asks all educational institutions to adopt a uniform mental-health policy, taking cues from existing frameworks such as the UMMEED Draft Guidelines, the Ministry of Education's MANODARPAN initiative, and the National Suicide Prevention Strategy.

## HOW THE ANTIBIOTIC CULTURE IN INDIA IMPERILS MENTAL HEALTH

While threat of antimicrobial resistance is acknowledged as a formidable public health hazard, its implications on mental well being remain under examined; public health campaigns must pivot towards education and empowerment and regulatory reform is imperative to address the issue

As mental health awareness gains momentum in India, a surreptitious menace is insidiously undermining this edifice of progress: the unbridled use of antibiotics. Whilst the threat of antimicrobial resistance (AMR) is ubiquitously acknowledged as a formidable public health hazard, its profound implications on mental well being remain under examined. At the epicentre of this conundrum lies the intricate gut-brain axis — a labyrinthine communication nexus between the gastrointestinal apparatus and the cerebral cortex.

Nascent research suggests that perturbations in gut microbiota, frequently precipitated by overzealous antibiotic consumption, may significantly contribute to the aetiology of anxiety, depression, and cognitive degeneration. In a country where antibiotics are often taken sans prescription or medical oversight, this gut-brain axis nexus demands an urgent and paradigmatic shift in attention for remedial measures to mitigate this silent yet calamitous crisis.

### **Antibiotic consumption**

India occupies a distressing prominence in the global hierarchy of antibiotic consumption. The trifecta of over-the-counter accessibility, rampant self-medication, and limited public awareness has cultivated an entrenched culture of antibiotic overutilisation. According to the Institute for



Health Metrics and Evaluation, antimicrobial resistance (AMR) was accountable for an estimated 2,67,000 fatalities in India in 2021, with projections forecasting an escalation to 1.2 million by 2030, should prevailing trends continue.

A seminal study published in 2022 in *The Lancet Regional Health – Southeast Asia* revealed a disquieting statistic: nearly half of all antibiotics consumed in India comprised unapproved formulations, exacerbating the threat of resistance. This egregious misuse not only fuels the conflagration of AMR but also precipitates a deleterious impact on the gut’s microbial diversity — a vital constituent of mental well being.

### **What’s in the gut**

The gastrointestinal tract harbours trillions of microorganisms that exert a profound influence on the biosynthesis of pivotal neurotransmitters, including serotonin and dopamine. These chemical messengers orchestrate the regulation of mood, sleep-wake cycles, and stress responses, and so, the gut plays an integral role in maintaining neurological homeostasis. When antibiotics disrupt this delicate microbial equilibrium, the repercussions can resonate throughout the nervous system, potentially precipitating a cascade of downstream effects.

Pioneering research from institutions such as the National Institute of Mental Health and Neurosciences (NIMHANS) and the All India Institute of Medical Sciences (AIIMS) has initiated an exploration of the intricate relationship between gut dysbiosis and psychiatric maladies. Although the scientific discourse is still evolving, the accumulating evidence is sufficiently compelling to justify the implementation of targeted public health interventions towards a proactive and informed response to mitigate the burgeoning threat of gut-related psychiatric disorders.

The ramifications of microbial perturbation extend beyond mere biochemical imbalances; they encompass a broader psychosocial dimension that implicates the very fabric of human experience. The gut microbiota, often romanticised as the “second brain,” is not merely a passive consortium of bacteria, but an active participant in neurochemical symphony. Through the production of short-chain fatty acids, modulation of the immune system, and interaction with the vagus nerve, these microorganisms wield influence over neurodevelopmental trajectories and behavioural phenotypes.

Indeed, the burgeoning field of psychobiotics — a portmanteau term coined to describe probiotics and prebiotics that confer mental health benefits — has illuminated the therapeutic potential of modulating gut flora to ameliorate psychiatric symptoms. A 2020 meta-analysis published in *Frontiers in Psychiatry* revealed that probiotic supplementation was associated with significant reductions in depressive symptoms, particularly among individuals with mild to moderate depression. Such findings underscore the plausibility of gut-targeted interventions as adjuncts to conventional psychiatric care, especially in a nation like India where mental health infrastructure remains woefully inadequate.

Compounding this crisis is the paucity of public awareness regarding the gut-brain axis and its susceptibility to pharmacological insult. The average Indian consumer, often bereft of access to nuanced medical counsel, remains oblivious to the long-term consequences of indiscriminate antibiotic use. The cultural proclivity towards “quick fixes” and the valorisation of pharmaceutical interventions over lifestyle modifications further entrench this paradigm. In rural and semi-urban locales, where healthcare access is fragmented and regulatory oversight lax, antibiotics are dispensed easily, and without prescription — frequently for viral infections where they are not only ineffective but actively deleterious.



Moreover, the economic incentives that drive antibiotic over-prescription cannot be ignored. Private practitioners, operating within a fee-for-service model, may be inclined to prescribe antibiotics to appease patient expectations or expedite symptomatic relief. Pharmacies, often unregulated, serve as de facto dispensaries, offering potent medications without requisite prescriptions. This confluence of systemic vulnerabilities and behavioural predispositions has rendered India a fertile ground for AMR proliferation and microbial dysbiosis.

The implications for mental health are manifold. Dysbiosis-induced inflammation has been implicated in the pathogenesis of major depressive disorder, with elevated levels of pro-inflammatory cytokines such as IL-6 and TNF-alpha observed in affected individuals. These inflammatory mediators can traverse the blood-brain barrier, altering neurotransmitter metabolism and neuroplasticity. Furthermore, gut-derived metabolites like butyrate and propionate have been shown to influence gene expression in the brain, modulating synaptic function and stress reactivity.

### **Need for interventions**

In this context, the intersection of microbiology and psychiatry assumes profound significance. It invites a reconceptualisation of mental illness — not merely as a cerebral aberration but as a systemic dysfunction with gastrointestinal antecedents. Such a paradigm shift necessitates interdisciplinary collaboration, integrating gastroenterology, psychiatry, nutrition, and public health to forge holistic interventions.

Encouragingly, India possesses a rich repository of traditional knowledge that can be harnessed to promote gut health. Fermented foods — ubiquitous in Indian cuisine — such as curd, idli, dosa, and pickles, serve as natural probiotics, fostering microbial diversity and resilience.

Public health campaigns must pivot towards education and empowerment. The National Health Mission and Ayushman Bharat can incorporate gut-brain literacy into their outreach programmes, elucidating the dangers of antibiotic misuse and the virtues of dietary modulation. School curricula can embed modules on microbiome science, cultivating a generation of informed citizens. Media platforms, both traditional and digital, can amplify narratives that valorise microbial stewardship and mental wellbeing.

Simultaneously, regulatory reform is imperative. The Central Drugs Standard Control Organization must enforce stringent controls on antibiotic dispensation, mandating prescription-only access and penalising non-compliance. More surveillance systems such as INSAR (Indian Network for Surveillance of Antimicrobial Resistance), which is now part of a broader network, should be created and integrated with mental health metrics to elucidate correlations and inform policy. Investment in microbiome research, particularly within Indian populations, can yield context-specific insights and therapeutic innovations.

Clinicians, too, must recalibrate their praxis. Antibiotic stewardship should be embedded within medical training, sensitising practitioners to the collateral damage of pharmacological interventions. Psychiatric evaluations can incorporate gastrointestinal assessments, recognising the bidirectional interplay between gut and mind. Nutritional counselling, often relegated to ancillary status, must be foregrounded.

As India strides towards a more enlightened discourse on mental health, it must not overlook the microbial foundations of well being.