



CURRENT AFFAIRS FOR UPSC

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INTERNATIONAL

ISRAEL AND HAMAS AGREE TO PHASE 1 OF TRUMP'S GAZA PEACE PLAN; FREEING HOSTAGES, PRISONERS

US President Donald Trump has announced on Thursday that Israel and Hamas have signed off on the first phase of the US-proposed Gaza peace deal, allowing for the release of all the hostages very soon.

- The agreement, in the initial stage, resulted from Trump's 20-point peace plan for Gaza during indirect talks between Israel and Hamas in Egypt, just a day after the second anniversary of Hamas' attack on Israel that triggered Israel's devastating war against Gaza.
- The US-backed Gaza peace talks began in Egypt's Red Sea resort of Sharm El Sheikh a couple of days ago with delegations from Egypt, Qatar and the United States as intermediaries.
- The US president announced that both Israel and Hamas have signed off the first phase of the Gaza ceasefire plan and that it would bring the release of all the hostages, alive and dead "very soon".
- The war has deepened Israel's international isolation and upended the Middle East, having evolved into a regional conflict that has drawn in Iran, Yemen and Lebanon. It also tested the U.S.-Israeli relationship, with Trump seeming to lose patience with Netanyahu and pressuring him to reach a deal.
- The accord, if fully implemented, would bring the two sides closer than any previous effort to halt the war.
- Much could still go wrong. Even after the deal was signed, a Palestinian source said the list of hundreds of Palestinians to be released was not finalised. The group is seeking freedom for some of the most prominent Palestinian convicts held in Israeli jails, as well as hundreds of people detained during Israel's assault.
- Further steps in Trump's 20-point plan have yet to be discussed. Those include how the shattered Gaza Strip is to be ruled when the fighting ends and the ultimate fate of Hamas, which has so far rejected Israel's demands it disarm.
- Netanyahu also faces scepticism from within his governing coalition, as many have long opposed any deal with Hamas. Far-right National Security Minister Itamar Ben-Gvir said he would vote to bring down the government if Hamas is not dismantled.
- The history of the region suggests that working out peace accords to end conflicts is a little like cleaning up after volcanic eruptions: There is a certainty it will happen again. It is just hard to know when, or how ferociously.



Do You Know:

- Trump knows that by far, the best international accomplishment of his first term was the Abraham Accords, which normalised relations between Israel and the United Arab Emirates and Bahrain, the first Arab states to recognize Israel in a quarter of a century.
- But in many ways, stopping the carnage of this war — which destroyed Hamas' leadership, 90% of the homes in Gaza, and ultimately tore at Israel's global standing — is an even bigger accomplishment.
- Highlights of Trump's 20-point Gaza peace plan:
 - The 20-point document released by White House calls for an immediate ceasefire, an exchange of hostages held by Hamas for Palestinian prisoners held by Israel, a staged Israeli withdrawal from Gaza, Hamas disarmament and a transitional government led by an international body.
 - According to the plan, Hamas would have no part in administering Gaza, and all its military infrastructure — including tunnels — would be dismantled. Hamas members who pledge to live peacefully would be granted amnesty, and those who wish to leave Gaza would be allowed to do so.
 - The international security force would ensure Hamas' disarmament and keep order. It would also train Palestinian police to take over law enforcement.
 - Humanitarian aid would be allowed to flow into Gaza in large amounts and would be run by “neutral international bodies”, including the UN and the Red Crescent.
 - The US, Arab and international partners will develop a temporary International Stabilization Force (ISF) to deploy immediately in Gaza.
 - The plan envisages the governance structure of Gaza — what is doctrinally called the “The Day After plan”. This says that Gaza will be governed under the “temporary transitional governance” of a “technocratic, apolitical Palestinian committee”, responsible for delivering the day-to-day running of public services and municipalities for the people in Gaza.
 - The plan says that a guarantee will be provided by regional partners to ensure that Hamas and its factions comply with their obligations and that New Gaza poses no threat to its neighbours or its people.
 - In this context, eight Arab and Muslim nations — Qatar, Jordan, the United Arab Emirates, Indonesia, Pakistan, Turkey, Saudi Arabia, and Egypt — on Tuesday issued a joint statement welcoming Trump's proposal. China and Russia have also welcomed the plan.
 - For India, peace in the region is important, for its diaspora, its economic interests and its strategic needs. There are about 18,000 Indians in Israel, about 5,000-10,000 in Iran, and some 90 lakh in the region as a whole.
 - The region provides India with 80 per cent of its oil supplies. Also, major Arab countries have been keen to invest in the Indian economy; those plans will get a boost



with peace. Then there is the India-Middle East-Europe Economic corridor, which India has high hopes from.

- India hopes to reap the dividends from peace in the region, which is beneficial for its access to Europe and Central Asia, and its economic and trade corridor. That was evident during the post-Abraham Accords period, since the first Trump administration, and the formation of an economic grouping like the I2U2 with India, Israel, US and UAE as its members.
- Former British Prime Minister Tony Blair is set to play a pivotal role in the transitional authority governing post-war Gaza. The plan, influenced by Blair's earlier proposal through his think tank, envisions an international body—the Gaza International Transitional Authority (GITA)—overseeing Gaza, with Palestinian involvement limited to local administrative duties, while the main strategic control rests with international figures including Blair and Trump. The structure and funding for Gaza's redevelopment will be managed by this international "Board of Peace", which includes billionaire investors and representatives to provide legitimacy.
- The approach has drawn criticism for excluding Palestinian consultation and positioning Blair—a controversial figure due to his support for the Iraq war and perceived failures as Middle East envoy—in a leading role. Blair's legacy is marked by achievements such as the Good Friday Agreement but also by the divisive Iraq war, after which he became a political outcast. Despite his experience, Blair's tenure as Middle East envoy was seen as ineffective by Palestinians, and his close ties with influential figures like Israeli Prime Minister Netanyahu and financial interests have further fuelled scepticism about his suitability for the role.
- Overall, Blair's appointment symbolises continued external control over Palestinian affairs, with many viewing the move as perpetuating a legacy of intervention and sidelining local voices in determining Gaza's future.

WHEN HISTORY BECOMES A BATTLEFIELD

History is not meant to comfort; it is meant to clarify. Yet in the United States under former President Donald Trump's administration, a disquieting campaign unfolded — one that sought to retell, or rather, "reframe," the nation's complex past in a more flattering light. At the heart of this movement lay a directive to the National Park Service and other federal institutions: scrub interpretive materials of anything that "disparages Americans past or living." The result was a subtle but significant pressure to sanitise the darker chapters of U.S. history, from slavery to the displacement of Indigenous peoples and even the realities of climate change.

The battleground for this struggle is strikingly symbolic. Harpers Ferry, where abolitionist John Brown's 1859 raid helped ignite the Civil War, stands as a frozen reminder of the moral convulsions that once defined America. To temper its story is to erase the very essence of the site. For descendants like Brianna Wheeler, whose ancestor fought in Brown's rebellion, this sanitisation is nothing short of betrayal. "You can't erase that," she insists — and she is right. The purpose of national parks and museums is not to flatter the living but to honour the truth of the past, however uncomfortable it may be.

The Trump-era directive to remove or revise "inappropriate content" blurred the line between patriotism and propaganda. Reports from various parks suggest that brochures mentioning



“enslavers” were withdrawn, and signage addressing environmental damage or colonial violence flagged for review. While the stated goal was to present a “balanced” account, balance cannot be achieved by omission. To reduce slavery’s brutality to a footnote or to erase Indigenous suffering in the name of “national pride” is to construct an alternate reality — one that values sentiment over substance.

This pressure extended beyond the parks to the Smithsonian museums, where Trump decried exhibits that “go too deep” into America’s injustices. But such criticism misunderstands the role of public institutions. They exist not to polish the past but to present it, in its full and often painful complexity. Nations grow stronger not by denying their flaws but by confronting them.

Even more troubling was the extension of this revisionist impulse into the realm of nature. At Acadia National Park in Maine, signs referencing climate change were reportedly removed. To silence the science of environmental degradation under the pretext of preserving “beauty and grandeur” is to deny the evidence of one’s own eyes. A national park stripped of its truth becomes a postcard — picturesque, but hollow.

Democratic lawmakers and civil society groups rightly demanded accountability, warning that the arc of history might indeed be bending — not toward justice, but toward revisionism. History, once rewritten, has a way of hardening into myth. And myth, when endorsed by power, becomes ideology.

Ultimately, the American story is vast enough to contain both triumph and tragedy. The greatness of a nation lies not in its ability to whitewash the past but in its courage to face it. National parks and museums must remain spaces of reflection, not instruments of reassurance. For if truth becomes negotiable, history itself ceases to be a guide — and becomes a tool for those who fear what it might reveal.

TRUMP’S \$100,000 FEE FOR H-1B WORKER VISAS CHALLENGED IN COURT

A coalition of unions, employers and religious groups filed a lawsuit on Friday seeking to block President Donald Trump’s bid to impose a \$100,000 fee on new H-1B visas for highly-skilled foreign workers.

- The lawsuit filed in federal court in San Francisco is the first to challenge a proclamation Trump issued two weeks ago announcing the fee as the Republican president moves to further restrict immigration to the United States.
- Plaintiffs argued that Trump’s power to restrict the entry of certain foreign nationals does not allow him to override the law that created the H-1B visa program.
- White House spokeswoman Abigail Jackson in a statement said Trump’s administration engaged in lawful actions “discouraging companies from spamming the system and driving down American wages, while providing certainty to employers who need to bring the best talent from overseas.”
- The program allows U.S. employers to hire foreign workers in specialty fields, and technology companies in particular rely heavily on workers who receive H-1B visas.



- Critics of H-1Bs and other work visa programs say they are often used to replace American workers with cheaper foreign labor. But business groups and major companies have said H-1Bs are a critical means to address a shortage of qualified American workers.
- Employers who sponsor H-1B workers currently typically pay between \$2,000 and \$5,000 in fees, depending on the size of the company and other factors.
- Trump's order, bars new H-1B recipients from entering the United States unless the employer sponsoring their visa has made an additional \$100,000 payment. The administration has said the order does not apply to people who already hold H-1B visas or those who submitted applications before September 21.

Do You Know:

- The H-1B visa programme allows US employers to hire immigrant workers in specialty occupations that require “a high level of skill” and “at least a bachelor’s degree”, according to the US Department of Labour.
- The program was started in 1990, with the intention of helping “employers who cannot otherwise obtain needed business skills and abilities from the US workforce by authorising the temporary employment of qualified individuals who are not otherwise authorised to work in the United States”.
- The initial validity of the H-1B visa is up to three years. It can be extended once, for another three years, giving a total of up to six years in most cases.
- Currently, there is an annual numerical limit (regular cap) of 65,000 new statuses/ visas under this program each fiscal year, with an extra 20,000 visas available to those with a master’s degree or higher from a US university.

FRANCE IN POLITICAL TURMOIL: A NATION IN CRISIS

France is experiencing its worst political instability since the founding of the Fifth Republic in 1958, with revolving governments, massive protests, and mounting debt creating a perfect storm of chaos.

The Recurring Government Collapses

France is facing renewed political instability after Prime Minister Sebastien Lecornu's sudden resignation, just hours after unveiling his cabinet. This follows the earlier collapse of François Bayrou's government. Prime Minister François Bayrou asked for a confidence vote on his debt-cutting plan to be held on September 8, with opposition parties on the far right and hardline left vowing to oust him.

The pattern is clear: France entered a period of political instability and crisis, unprecedented in the Fifth Republic, after the 2024 French legislative election called by President Emmanuel Macron in June 2024, which resulted in a hung parliament split into three opposed blocs, each unable to command a majority.

The Economic Fallout

The political chaos is hitting France's economy hard:



Debt Crisis: At the end of the first quarter of 2025, France's public debt stood at 3.346 trillion euros, or 114% of gross domestic product. Yields on French government bonds have risen above those of Spanish, Portuguese and Greek bonds, which were once at the heart of the eurozone debt crisis.

Budget Paralysis: France is at risk of entering the new year without an approved 2026 budget. In that case, the government would operate under an automatic extension of the 2025 budget, limiting both new spending and reform initiatives.

Mass Protests Rock the Nation

In early September 2025, France was rocked by nationwide protests under the banner "Bloquons Tout" ("Block Everything"), a movement born of widespread anger over proposed budget cuts and perceived political instability. The protests disrupted public life across the country.

What's Next?

France is likely to remain politically unstable at least until the next presidential election, struggling to reverse its unhealthy fiscal trajectory, and acting as a drag on European growth and institutional reform. The crisis shows no signs of resolution, leaving Europe's second-largest economy in unprecedented turmoil.

SYRIA'S FIRST PARLIAMENTARY ELECTIONS AFTER ASSAD'S FALL

Syria recently held its first parliamentary elections since the dramatic overthrow of Bashar al-Assad's regime in December 2024, marking a significant milestone in the country's transition—though the process has raised concerns about inclusivity and democratic legitimacy. Syria published the results of its first parliamentary election since Assad's fall on October 6, 2025.

The Electoral System

This wasn't a traditional democratic election. The process is not a popular vote or a general election. It instead adopts a hybrid model, with pre-selected electoral colleges voting to elect representatives for their respective districts, while other representatives are appointed directly.

The People's Assembly will comprise 210 MPAs, with 140 MPAs (two-thirds) being elected through this process. However, up to 32 of the 210 members' seats will remain empty, highlighting ongoing challenges in forming a fully representative government.

The Political Context

In March 2025, Ahmed al-Sharaa ratified an interim constitution for the transitional period, establishing Syria as a presidential republic without a prime minister and setting a five-year transition period. Al-Sharaa is the leader of Hayat Tahrir al-Sham (HTS), the group that led the rebellion against Assad.

Concerns About Legitimacy

The indirect election system and appointment of representatives have raised questions about whether this truly represents a democratic transition or simply consolidates power under new leadership. The process reflects the complex challenge of rebuilding Syria's political system after decades of authoritarian rule and years of devastating civil war.



This election represents a crucial test for Syria's new authorities as they attempt to build legitimacy while managing a deeply fractured society.

JAPAN'S IRON LADY

Even before she faces a parliament vote to become Japan's first woman Prime Minister, Sanae Takaichi has set a record as the first woman to lead Japan's dominant Liberal Democratic Party (LDP). After defeating her more centrist rival Shinjiro Koizumi in party elections on Friday, Ms. Takaichi, a 64-year-old protégée of former Prime Minister Shinzo Abe, is seen as a socially conservative right-winger. If she wins the parliamentary vote, as expected, she faces more difficult challenges than breaking the decades-old glass ceiling. To begin with, Ms. Takaichi is the latest in a series of Japanese Prime Ministers ousted from office, even as the LDP and its partner Komeito have lost majorities in both houses, and will need to lead a fractious coalition by reaching out to the opposition. Her predecessor Shigeru Ishiba stepped down after the LDP lost its majority, after serving for less than a year. It remains to be seen how Ms. Takaichi, who has spoken of her admiration for former British Prime Minister Margaret Thatcher, is able to emulate the "Iron Lady's" successes in holding the party and government together. While clearly the most popular party leader at the moment, she is a polarising politician who is known for strong views against immigration, and in favour of revising Japan's pacifist constitution. She does not project a feminist agenda and has been criticised for refusing to review archaic Japanese laws on married women keeping surnames or on the more contentious issue of female succession in Japanese royalty. The second challenge is geopolitical — Japan's public confidence in the United States has been shaken by the Trump administration's actions, including driving a hard bargain on the Free Trade Agreement. Ms. Takaichi is a hardliner on China, which could put her on a collision course with Beijing. Her rise has also been seen with some concern in South Korea, which had begun to warm up to Japan, as her visits to the Yasukuni shrine to venerate Japanese war heroes, and her tough line against war reparations, may be a red flag. Finally, Ms. Takaichi, a former Economic Security Minister, will have to contend with Japan's long-term economic challenges and demographic decline.

In India, her win will be largely seen positively, given her association with Shinzo Abe, whose tenures saw rapid improvements in India-Japan ties. The government will seek to continue its cooperation on many fronts, especially in technology and critical mineral processing. Above all, amidst uncertainty over the Quad summit and Mr. Trump's commitment to the Indo-Pacific policy, New Delhi will hope to see a strong leader in Tokyo, who will help shore up the geopolitical turbulence that the region now faces.



NATIONAL

A MARSHLAND OF CONTENTION

Sir Creek is a 96-km-long estuary that lies between Kutch in Gujarat and Pakistan's Sindh province. It is a muddy, uninhabited marshland in the Rann of Kutch that flows into the Arabian Sea. Once known as Ban Ganga, it was renamed Sir Creek after a British officer during colonial times.

The dispute over this area dates back to the British period. During the time, the entire region was part of the Bombay Presidency, which included the present-day Maharashtra, Gujarat and Sindh. After Partition in 1947, Sindh became part of Pakistan while Kutch remained with India. The core of the dispute is about where to draw the boundary.

Pakistan claims the entire creek, citing a 1914 Bombay Government Resolution that established the boundary along the eastern bank — the so-called Green Line — effectively placing the creek in Sindh. India argues for the mid-channel principle, backed by a 1925 map and the internationally accepted Thalweg principle, which says that the border between two nations sharing a navigable waterway should run along the deepest channel. India maintains that Sir Creek becomes navigable during high tide, and so the boundary should run through the middle. Pakistan disputes this, insisting that the creek is not navigable.

Economical value

Though the creek itself has little military value, it is of enormous economic importance. The definition of the International Boundary at Sir Creek has a direct impact on the delimitation of both countries' Exclusive Economic Zones (EEZs) in the Arabian Sea. The EEZs extend up to 200 nautical miles (370.4 km) beyond a nation's territorial waters, within which it has jurisdiction over living and non-living resources.

Apart from the EEZs, control over the Creek would influence the delimitation of maritime boundaries, including continental shelves, which are crucial for oil and gas exploration. The region is believed to have reserves of both, and fishing rights are also a sensitive issue. Fishermen from both countries often cross the unmarked maritime boundary by mistake and end up being arrested.

The Gulf of Kutch houses two of India's major ports — Mundra and Kandla — which add to the strategic weight. In addition, Chinese-backed mining and power projects on the Pakistani side of the Rann of Kutch have raised concerns in India that civilian projects could turn into strategic or military assets.

Recent months have seen the issue flaring up again. Between May 8 and 9, Pakistan violated Indian airspace by attempting to target military installations with up to 400 drones across 36 locations, including the Sir Creek region. Intelligence reports have highlighted heavy Pakistani military activity near the creek. At the same time, Pakistan's Army chief Asim Munir has threatened strikes against an oil refinery in Jamnagar, not far from the area.

Against this backdrop, Defence Minister Rajnath Singh, during a visit on October 2, warned Pakistan that "a route to Karachi passes through Sir Creek", reminding Islamabad of India's 1965 advance close to Lahore. He stressed that while India had tried to resolve the dispute through



dialogue, Pakistan's intentions remained dubious. Any act of aggression, he said, would invite a strong response that could "change both history and geography".

Security officials familiar with the terrain of Sir Creek say large-scale ground offensives are nearly impossible in this marshy, roadless and uninhabited zone. Infiltrators have been caught in the past, but the bigger challenge today comes from UAVs and drones, which could target critical infrastructure such as ports and refineries located in the EEZ. The Sir Creek dispute is no longer only about boundary lines but also about energy security, maritime rights, and the risk of combined strategic pressure from Pakistan and China.

The boundary in Sir Creek and the maritime line between India and Pakistan remain unresolved. A joint hydrographic survey in January 2007 was followed by talks in May 2007 in Islamabad, where both sides exchanged maps and agreed to continue talks. The data failed to resolve the core disagreement over the boundary's location. After the 1972 Simla Agreement, it is not possible for a third party to intervene either.

TRUMP MEETS ASIM MUNIR AND SHEHBAZ SHARIF: HOW SHOULD INDIA REACT?

The US-Pakistan relationship is entering an interesting phase. In the nine months since Donald Trump returned to the White House, a series of diplomatic exchanges has reflected a new warmth towards Pakistan, in contrast to the coldness of the Joe Biden administration. In his first address to a joint session of Congress in March, Trump thanked Pakistan for its role in the arrest of a wanted ISIS-K terrorist linked to the 2021 Kabul airport attack. Three months later, he hosted Pakistan's army chief, Asim Munir, for lunch at the White House. The camaraderie was again on display last week when Trump welcomed Shehbaz Sharif — the first Pakistani PM to visit Washington in over six years — along with Munir. This marks a departure from Trump's first term, when the US was still entangled in Afghanistan and his administration was deeply sceptical of Pakistan's counterterrorism efforts. While there is little cause for alarm for India, Delhi should take note of this shift at a moment when its own ties with Washington are at a low.

Beyond counterterrorism, Islamabad is relevant to Washington with respect to regional dynamics, particularly Afghanistan and Iran. Yet, the strategic bond is thin. Unlike partnerships that rest on technology, trade or shared values, US-Pakistan ties are largely transactional. Pakistan recommending Trump for the Nobel Peace Prize for the so-called "decisive diplomatic intervention" during Operation Sindoor is perhaps the most recent example. As history shows, most notably during the Afghan-Soviet War, America's assistance to, and engagement with, Pakistan go up when Islamabad aligns with Washington's priorities. Once those objectives are met, aid is scaled back or suspended. With Trump, what stands out is his limited regard for institutions, and that is likely to bolster Munir and reinforce the role of the military in Pakistan. India should be prepared for adventurism by the Pakistani army.

Pakistan is a country of 250 million people, a nuclear power, and situated in a strategically volatile region. It is only natural, therefore, that the US continues to engage with Islamabad. Yet no matter how hard Munir seeks to cast Pakistan as India's equal, the reality is different: India's GDP is nearly 10 times larger, and the gap is widening, not only economically but also in terms of global stature. Amid developments like the Trump-Sharif-Munir closed-door meeting, Delhi's focus should remain on deepening partnerships with nations central to its rise while maintaining unity and accelerating reform at home. Finally, India should prioritise reinvigorating its relationship with the US.



GOVT PANEL RECOMMENDS GREEN APPROVAL FOR SAWALKOTE HYDEL PROJECT IN INDUS BASIN

Stalled for nearly four decades, the Sawalkote hydroelectric project on the Chenab river in the Indus basin has received a push, with the Union Environment Ministry's expert panel on hydropower projects recommending it for environmental clearance, according to minutes of a recent meeting.

- The 1,865 MW project, to be built by NHPC Ltd in Jammu and Kashmir's Ramban district, will be one of the largest on the west-flowing Chenab. It entails a 192.5-metre-high concrete gravity dam with a reservoir capacity of 530 million cubic metres spread over 1,159 hectares. The installed capacity will be 1,406 MW in Stage I and 450 MW in Stage II.
- The Centre expedited the project, first initiated in 1984, after putting the Indus Waters Treaty (IWT) in abeyance following the Pahalgam terror attack in April this year. Under the IWT, the west-flowing Chenab, Indus and Jhelum rivers are under Pakistan's control.
- Interestingly, the EAC minutes did not mention whether cumulative impact assessment (CIA) and carrying capacity studies (CCS) for the Chenab basin were considered before recommending clearance. Such studies are generally required under ministry norms to assess the long-term ecological and social impacts of large hydropower projects.
- The question of exemption from these studies was addressed earlier by the Environment Ministry's Forest Advisory Committee (FAC) while considering forest clearance. The FAC had held that since the project was initiated in 1984, the CIA and CCS guidelines introduced in 2013 would not apply retrospectively. It also took note of letters from the Ministries of Power and Home Affairs seeking exemption on strategic grounds.
- In its letter, the Home Ministry said the project was of "strategic importance" and that swift construction was "essential for leveraging the Chenab river's potential". The Power Ministry stated that in the "current geopolitical scenario", undertaking the studies could delay approvals and affect implementation of key hydel projects in Jammu and Kashmir.
- The Chenab basin already hosts three operational projects — the 390 MW Dulhasti in Kishtwar, the 890 MW Baglihar in Ramban, and the 690 MW Salal in Reasi.

Do You Know:

- The IWT was signed in Karachi on September 19, 1960, following nine years of negotiations between India and Pakistan. The Treaty has 12 Articles and 8 Annexures (from A to H).
- According to the provisions of the Treaty, all the water of the "Eastern Rivers" of the Indus system — Sutlej, Beas and Ravi — shall be available for the "unrestricted use" of India. Pakistan shall receive water from the "Western Rivers" — Indus, Jhelum, and Chenab.
- The Chenab River, the largest tributary of the Indus, has a length of 1,180 km in India. It is formed by the confluence of the Chandra and Bhaga rivers at Tandi in Keylong, Himachal Pradesh.



EXPRESS VIEW ON ENGAGING WITH TALIBAN: A NECESSITY

Ever since the Taliban seized Kabul in August 2021, India has engaged with it gradually and incrementally. A big breakthrough came in January 2025, when Foreign Secretary Vikram Misri met Afghanistan's Foreign Minister, Amir Khan Muttaqi, in Dubai. Now on his first official visit to India, Muttaqi on Friday met External Affairs Minister S Jaishankar, who announced that India will upgrade ties and reopen its embassy in Kabul. This follows their positive conversation in May, days after the India-Pakistan ceasefire following the Pahalgam terror attack, which was unequivocally condemned by the Taliban. The series of engagements confirms that New Delhi recognises the ground reality that the Taliban is the only force, for now, that appears capable of controlling all of Afghanistan. It is also an acknowledgement that, in a highly competitive neighbourhood, maintaining ties with the Taliban is a geostrategic necessity.

Relations between the Taliban and Pakistan have deteriorated sharply in the recent past. Islamabad has accused the Taliban of sheltering the Tehreek-e-Taliban Pakistan and has carried out airstrikes inside Afghan territory targeting alleged hideouts. As recently as Thursday, the Taliban blamed Pakistan for explosions in Kabul and Paktika province. Meanwhile, Pakistan's mass expulsion of Afghan nationals has further strained ties. In this fraught context, India's position was evident in Jaishankar's remarks to Muttaqi on Friday, where he stressed that India and Afghanistan have a "common commitment towards growth and prosperity", which are "endangered by the shared threat of cross-border terrorism" and that there must be "coordinated efforts" to "combat terrorism in all its forms and manifestations". New Delhi should use its growing ties with the Taliban to help prevent Afghanistan from turning into a launchpad for anti-India terror groups.

Beyond food, healthcare, disaster relief, and infrastructure projects, India has shown support for the Taliban on the global stage recently by joining Pakistan, China, and Russia in opposing US President Donald Trump's bid to take over Bagram airbase in Afghanistan. The Jaishankar-Muttaqi meeting makes it clear that the Taliban wants India to engage more with Afghanistan, citing "long civilisational and people-to-people ties for centuries." To be sure, this growing entente coexists with a disquieting reality: The Taliban remains an autocratic regime with scant regard for human rights, particularly those of women. As recently as Monday, the UN Human Rights Council agreed to establish an "ongoing, independent investigative mechanism" to probe abuses in Afghanistan. This is also why, despite greater engagement, India still refrains from formally recognising the Taliban government. To not talk, however, carries its own risks. Beijing has already signed major investment and security agreements with the Taliban, and India cannot afford to let Afghanistan, a country of immense regional importance, drift entirely into China's orbit. New Delhi must therefore maintain a cautious engagement with Kabul, balancing pragmatic interests with its commitment to the well-being of Afghanistan's people.

EXPRESS VIEW: ATTACK ON CJI GAVAI, ASSAULT ON TOLERANCE

The attack on the Chief Justice of India by a lawyer who allegedly hurled a shoe at him inside the Supreme Court Monday morning marked a new low. That the head of the institution of the judiciary should be targeted, apparently for remarks he made while refusing to entertain a public interest litigation seeking judicial intervention for the reconstruction of an idol of Lord Vishnu in a Khajuraho temple – comments that were misinterpreted by a troll army citing "hurt Hindu sentiments", and that the CJI clarified subsequently — signals a breakdown of democratic civility. At the same time, the reaction to Monday's attempted attack has also been uncommon, and



welcome. In these polarised times, it has seen a rare coming together of leaders across political-ideological faultlines, to express their condemnation, with Prime Minister Narendra Modi taking the lead. The PM has said that the attack had “angered every Indian” and that there is “no place for such reprehensible acts in our society”. PM Modi’s words, and those of others belonging to the ruling establishment as well as the Opposition, underline that Monday’s incident was more than an attack on one individual – it was an act of disrespect towards the institution of the judiciary, the Constitution it upholds, and the rule of law.

Implicit, and also explicit in the outrage that is being expressed, giving it an undeniable edge, is the fact that the Chief Justice is also a Dalit. While CJI Gavai has not sought to draw attention to himself, kept his dignity and composure, and even signalled business as usual, political parties and leaders are rightly mindful and protective of the powerful symbolism of his presence at the apex of the judicial system. After all, the journey of an individual from India’s most marginalised to the judiciary’s top, the overcoming of incredible odds and the tracing of a long arc, are democracy’s precious achievements. But having said that, there is something more to this incident that must be acknowledged, and hopefully built on, going ahead. Quite simply, Monday’s attack must be looked at, and condemned, from both ends. It is unacceptable that a CJI, in this case a Dalit CJI, should be targeted. It is indefensible that this is done by claiming the CJI insulted Hinduism.

These are times when “Hindu/Hinduism under siege” has become a convenient justification for a range of transgressions by individuals and the mob, leading to shrinking spaces for expression and a coarsening of the public sphere. All too often, what makes the situation worse is that the powers-that-be turn a blind eye to this aggressive performance of victimhood, which curtails the rights of a range of vulnerable others. While the political project of Hindutva has notched its several successes by constantly widening its ambit, and coopting movements and strands that lay outside it, this has not been a seamless movement. There are collisions and contradictions, and often there is a tendency to label and demonise those who oppose, and attack any signs of perceived disagreement. The PM’s timely, strong — and much-needed — condemnation of the attack on the CJI becomes all the more powerful if it is read, also, as criticism of this growing intolerance.

SC TO HEAR PLEA BY CHRISTIAN ARMY OFFICER SACKED FOR REFUSING TO ENTER SANCTUM SANCTORUM

The Supreme Court is scheduled to examine on Monday the question of whether the right to religious freedom is subservient to military discipline while hearing a petition filed by a Christian Army officer who was issued an order of termination from service for refusing to enter the sanctum sanctorum of the regiment’s temple to perform pooja.

A Bench headed by Justice Surya Kant would examine the special leave petition filed by Samuel Kamalesan, who was terminated as a Lieutenant in the 3rd Cavalry Regiment, for defying military discipline by politely refusing a command from his superior officer to enter the innermost part of the temple to conduct aarti on the ground that it would affect his Christian faith.

High Court order

The Delhi High Court had upheld the Army’s action in a judgment in May, which held that Mr. Kamalesan “kept his religion above a lawful command from his superior. This clearly is an act of indiscipline”. The High Court concluded that his defiance was in violation of “essential military ethos”.



Mr. Kamalesan, represented by advocate Abhishek Jebaraj, explained the regiment comprised three squadrons of Sikh, Jat, and Rajput personnel. He was the troop leader of one of them. His regiment maintained only a mandir and a gurdwara. There was no church on the premises.

He claimed that he accompanied his troops to mandir, gurdwara for the weekly religious parades and attended festivals of his troops, such as Deepavali, Navaratri, Lohri, Gurpurab, and Holi. He had only sought exemption from entering the sanctorum of the temple during the aarti, not only as a sign of respect to his Christian faith but also towards the sentiments of his troops.

WHY IS ADR CRUCIAL FOR INDIA'S COURTS?

The story so far:

The Minister of Law and Justice recently reaffirmed the government's commitment to legal reforms rooted in India's civilisational ethos. Citing the doctrine of Panch Parmeshwar, which embodies the principle of collective consensus in dispute resolution, Arjun Ram Meghwal emphasised the need for global cooperation to strengthen Alternative Dispute Resolution (ADR) mechanisms. The India Justice Report 2025 highlights significant challenges in India's justice system, particularly including access, delays, and accountability. According to the National Judicial Data Grid (NJDG), the total number of pending cases in India is 4,57,96,239. In the Supreme Court, the number of pending cases is 81,768, and in the High Courts, it is approximately 62.9 lakh. These delays often result in injustice, increasing the focus on ADR as a faster, cost-effective, and socially inclusive way to deliver justice.

What is the constitutional basis of ADR?

The constitutional basis of ADR in India is enshrined in Article 39A, which mandates the state to provide equal justice and free legal aid. Various ADR processes, such as arbitration, conciliation, mediation, and judicial settlement (Lok Adalat), are recognised under Section 89 of the Code of Civil Procedure, 1908.

To regulate processes, these have been incorporated into law. For example, under the Arbitration and Conciliation Act 1996 (amended in 2021), civil and compoundable offences like theft, criminal trespass, and adultery are resolved through a binding award or resolution, respectively. The Arbitration Act, 2021, also mentions the establishment of an Indian Arbitration Council, giving legal backing to arbitration agreements.

The law fixes a maximum period of 180 days for dispute resolution, ensuring faster justice.

On many occasions, even after such a solution, if a party is dissatisfied, they can exit the process after two sessions of mediation. Pre-litigation mediation for resolving civil and commercial disputes will not increase the number of pending cases; it will also strengthen interpersonal relationships by increasing interaction at the social level.

How do Lok Adalats function?

Lok Adalats are governed by the Legal Services Authorities Act, 1987, inspired by Article 39A. Apart from Permanent Lok Adalat (Section 22-B of the Act), provisions of the National Lok Adalat and e-Lok Adalat are directly helpful in strengthening the justice system, provided awareness about such a system is made effective and widespread.



The first Lok Adalat in India was organised in Gujarat in 1999. The biggest feature of Lok Adalats is that their decisions shall be final and there is no possibility of appeal. This does not mean that the powers of these courts are absolute.

The reason for no appeal is that these courts resolve disputes before litigation. In order to prevent any possible absoluteness, it is provided that the dissatisfied party can file a suit in a court.

Why is strengthening ADR crucial?

According to former Chief Justice of India Justice D.Y. Chandrachud, mediation is a tool for social change, where social norms are brought in line with constitutional values through the exchange of views and flow of information. Solutions arrived at through invaluable discussions during mediation ensure true justice for individuals and groups on their terms, in a language they understand, and provide a platform that protects their sentiments.

The India Justice Report also highlights inter-State disparities in terms of the backlog of cases. The report says that pending cases have exceeded five crore, and High Courts and district courts are facing vacancy rates of 33% and 21% respectively. Judges in Uttar Pradesh, Himachal Pradesh and Kerala have workloads exceeding 4,000 cases.

A substantial number of cases in High Courts and subordinate courts have been pending for over 10 years. The NJDG provides real-time data on case pendency and disposal, offering a comprehensive view of the judicial system's performance across States and courts.

The India Justice Report ranks States based on their performance on various aspects of the justice system, including case pendency, with other factors like court infrastructure and judge availability.

States like Andhra Pradesh, Uttar Pradesh, and Bihar have a considerable number of pending cases. This urgently demands rapid disposal and necessitates the strengthening of the ADR for effective per capita justice delivery.

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WHAT IS THE SC ORDER ON LOCAL POLLS IN MAHARASHTRA?

The story so far:

The Supreme Court recently directed the Maharashtra State Election Commission to conduct elections of all local bodies by January 31, 2026. It also pulled up the Commission for not complying with its earlier order of May 6, directing it to notify the elections by September 6.

What are the reasons for the delay?

The continuous delay in conducting these elections is attributable not only to the pendency of the OBC (Other Backward Classes) reservation issue, but also the judicial delays, inconsistency, and lack of political will.

Today in Maharashtra, 29 Municipal Corporations, 248 Municipal Councils, along with hundreds of Nagar Panchayats, 32 out of 34 Zilla Parishads, 336 out of 351 Panchayat Samitis are run by administrators. While the biggest municipal corporation in India, the Brihanmumbai Municipal Corporation (BMC), with an annual budget of over ₹74,000 crore, has been functioning without



corporators since March 2022, the newly formed Municipal Corporations in the State, at Jalna and Ichalkaranji, await their corporators since their inception.

What is the issue around OBC reservation?

In 2010, the Supreme Court left it to the States to carry out a 'rigorous investigation' to decide which communities are 'politically backward' and should benefit from OBC reservation in local bodies. In March 2021, the apex court laid down a three-fold test to provide these reservations. As the State of Maharashtra failed to fulfil this test, in March 2022, the Banthia Commission was set up. It submitted its report in July 2022, which is currently under challenge before the Supreme Court. Meanwhile, the court ordered that States should carry out elections without the OBC quota if they fail to fulfil the criteria. Thus, the Commission conducted elections in 106 municipalities after relocating the OBC quota seats to the general category.

On May 6 this year, the apex court directed the State Election Commission to conduct elections with OBC reservation as existed prior to the 2022 Banthia Commission report. It reminded the Commission how local body elections are necessary for keeping democracy alive at the grassroots. While the Court's sentiment for conducting elections is commendable, it does not absolve the Court from the delay it caused. It will also lead to inconsistent outcomes as the election of 106 municipalities has already taken place without the OBC reservation. Additionally, the current elections are also subject to the outcome of pending litigation, which can potentially disqualify the elected representatives.

Despite the above orders, the State Commission took no steps to conduct elections. It cited insufficient EVM machines, the school education board's examination and an insufficient number of officers to justify the non-compliance with the Court's order.

Is the delay impacting work?

Some may argue that the lack of having elected representatives at local bodies hasn't really harmed anyone, given that bureaucrats are anyway running them. However, in reality, the developmental engine in both urban and rural areas has taken a hit due to democratic damage of weakened local bodies. People do not have a political avenue to voice their concerns. The burden automatically falls on local MPs or MLAs or guardian ministers of the district who are not readily available.

On the other hand, the bureaucracy is not really designed to 'make' decisions, but rather to 'execute' them. It is an undue burden on administrators to care for political issues, which fundamentally is the mandate of elected leaders. Political accountability of bureaucracy is clearly missing.

Running the local bodies through bureaucrats is no different from running a State through its Governor. This reality ultimately results in ignorance of people's demands, pendency of larger policy issues, lack of local economic development, undue burden on bureaucrats and weakening of democratic institutions.

Recently, Maharashtra Chief Minister Devendra Fadnavis announced that all 29 Municipal Corporations shall be headed by IAS officers, owing to allegations of corruption and political interference. This move itself suggests that urban local bodies are difficult to handle, especially when there is a democratic void. The issue is not just about the absence of elected representatives for a few years in local bodies; rather, it is intentional ignorance of the words and mandate of the



Constitution. Having a strong self-governance system at the local level, especially in villages, is a part of the law, after the 73rd and 74th constitutional amendments. An independent election commission and smooth transfer of power are hallmarks of constitutional liberal democracy. While the New York Mayoral election gains worldwide attention, we should inquire into why the lack of having an elected local body for Mumbai is not causing a noteworthy discontent.

SC REJECTS PETITION AGAINST TELANGANA ORDER FOR 67% QUOTA

The Supreme Court declined on Monday to entertain a petition challenging a Telangana government order enhancing the Backward Classes' quota in municipalities and panchayats to 42%, leading to the total reservation of seats in local bodies in the State to touch 67%.

A Bench of Justices Vikram Nath and Sandeep Mehta, however, gave the petitioner, Vanga Gopal Reddy, liberty to approach the Telangana High Court against the September 26 order of the State government.

The Bench had queried why Mr. Vanga Gopal had moved the top court in the first instance and not the High Court.

The petition, filed through advocate Somiran Sharma, raised the question whether States could increase the total reservation of seats in local bodies to breach the 50% ceiling.

Mr. Somiran pointed out the enhancement in the OBC quota had come prior to a notification issued by the Telangana State Election Commission announcing that the panchayat election process in the State would commence from October 9. Polling for the local bodies' election in Telangana would happen in two phases on October 23 and October 27.

Breaching limit

"Together with the existing 15% for Scheduled Castes and 10% for Scheduled Tribes, the aggregate reservation exceeds 67%, directly violating the 50% ceiling judicially prescribed by the Supreme Court," the petition had argued. The 50% ceiling rule in reservation was established by a nine-judge Bench of the Supreme Court in the Mandal Commission case judgment of 1992.

The September 26 order issued by Telangana had followed an attempt by the State to enact a law, the Telangana Backward Classes (Reservations of Seats in Rural and Urban Local Bodies) Bill, 2025, to enhance OBC seats in local bodies by 42%.

However, the petition said, the Bill had been neither assented to by the Governor nor by the President.

Mr. Vanga Gopal had said the Telangana government's order augmenting OBC quota in local bodies violated Section 285A of the Telangana Panchayat Raj Act, 2018, which expressly codified the 50% ceiling in reservation in local bodies' seats.

CAN A THIRD PARTY BE LIABLE FOR MARITAL DISRUPTION?

The story so far:

Recently, the Delhi High Court (HC), in a first-of-its-kind move in Shelly Mahajan versus MS Bhanushree Bahl & Anr, has opened the door for spouses to seek damages, in the civil sphere, from third parties who interfered in their marriage with malafide intention, causing its breakdown.

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Overruling the objections to the suit's maintainability, the High Court issued summons in a wife's suit seeking damages for Alienation of Affection (AoA), against her husband's alleged affair partner. The decision revived an old Anglo-American concept, long abolished globally, putting the spotlight on a rarely tested legal idea in India. Seen as sidestepping the Supreme Court's mandate in *Joseph Shine versus Union of India*, it also raises fresh questions on whether Indian civil courts can impose liability for third-party interference in marriage.

What is alienation of affection?

AoA is a term from common law referring to a "heart-balm" tort, which allows a spouse to sue a third party, usually the lover, for wilfully interfering in the marriage and causing 'loss of affection and companionship'. The doctrine rests on the idea that marriage carries legal interests like consortium, intimacy, support and a shared life. Notably, the Indian legal framework neither codifies nor prohibits AoA, yet in *Pinakin Mahipatray Rawal versus State of Gujarat (2013)*, the Supreme Court held that "alienation of affection by a stranger, if proved, is an intentional tort." In *Indra Sarma versus V.K.V. Sarma*, the top court further noted that AoA could even give children a cause of action against a third party for alienating their father. However, the doctrine has never been used to award damages in India.

How do U.S. courts view AoA?

In the U.S., AoA lawsuits remain in only a few States, like Hawaii, Mississippi, New Mexico, North Carolina, South Dakota, and Utah, while most others have abolished them over the past century as outdated or prone to abuse. In these States, for establishing a claim, the aggrieved spouse must prove three elements — (1) existence of genuine love and affection in the marriage; (2) its loss; and (3) that a third party's malicious conduct caused the loss. In contrast, States that have abolished AoA, through legislation or court rulings, consider such claims to be against public policy or incompatible with modern views of marriage. Thus, U.S. courts' stance on AoA varies, as a small number of courts still uphold the tort with strict proof requirements, while the majority reject it, treating marital breakdowns as private matters not suitable for compensation under tort.

What did Supreme Court decide in Joseph Shine's case?

In *Joseph Shine versus Union of India (2018)*, a five-judge Constitution Bench led by then Chief Justice of India (CJI) Dipak Misra decriminalised adultery, striking it from the Indian Penal Code while clarifying it remains a civil wrong and valid ground for divorce. In 2020, another five-judge Bench headed by former CJI Sharad A. Bobde dismissed review petitions as meritless. Earlier, the law punished a man with up to five years' imprisonment for sexual relations with another man's wife, but exempted the consenting wife from prosecution and did not apply it if the married man engaged in sexual relations with an unmarried woman or widow.

The 2018 *Joseph Shine* verdict held that consensual extramarital sexual relationships are no longer criminal, that is, no one can be jailed or fined for adultery. Striking down the colonial provision, the Supreme Court highlighted that adultery is not a crime if the husband connives or consents to his wife's extramarital affair, thereby treating a married woman as her husband's 'chattel'. Emphasising that adultery is "absolutely a matter of privacy at its pinnacle," the top court reasoned it should remain only a ground for divorce, not a crime. Thus, while decriminalised, adultery still carries civil consequences in family law or tort, as *Joseph Shine* did not expressly or impliedly foreclose such implications.



What did the Delhi High Court say?

In Shelly Mahajan, the Delhi High Court issued summons by taking a prima facie view that a spouse can sue the partner's paramour for interfering in the marriage and seek compensation. The HC clarified that while Joseph Shine decriminalised adultery, it did not grant a licence for 'extramarital relationships' free of civil or legal implications. Matrimonial statutes like the Hindu Marriage Act, 1955, offer remedies between spouses (for example, divorce), but none against a third party intruding into the marriage, the court further stressed.

Since matrimonial laws like the Hindu Marriage Act, 1955, provide remedies only between spouses, a civil tort claim against a third party for such interference remains open, in the absence of a specific bar, the court further stressed. However, the HC also acknowledged an important limitation that there has to be wrongful inducement or misconduct by the third party that caused the marital breakdown. When one spouse claims to have suffered legal injury on account of the disruption of the marital relationship, the law, under tort, recognises that compensation may be sought from those alleged to have contributed to the breach, the court noted.

The ruling clarified that while adultery is decriminalised and not punishable by the state, it still carries civil consequences in India. These include loss of consortium claims, compensation suits like the AoA case, and the personal remedy of divorce, where a betrayed spouse may petition the family court to dissolve the marriage on grounds of adultery. More importantly, the HC also laid down a three-fold test to decide such a claim. First, intentional and wrongful conduct by the paramour directed at alienating the marital relationship of the aggrieved spouse. Second, clear causation linking that conduct to a legally cognisable injury to the aggrieved spouse. Third, the loss claimed is susceptible to rational assessment.

Who has jurisdiction to decide the AoA claim?

One key issue before the Delhi HC was whether AoA suits should go for trial in family courts or civil courts. It held that family courts have exclusive jurisdiction over matrimonial causes between spouses (divorce, alimony, custody, etc.), but a claim against a third party for interfering in a marriage is an independent civil injury (a tort), not arising from the marital relationship itself. Therefore, a family court cannot adjudicate a tort claim against a third person, and the civil court retains the jurisdiction. The Court added that if a spouse has a protectable interest in the marriage, third parties bear a correlative duty not to intentionally and wrongfully alienate that affection.

The Delhi High Court's ruling marks a significant step in recognising civil recourse for spouses affected by interference in marriage. It opens the door for carefully framed claims that respect both personal autonomy and marital rights, offering a path for justice where harm has been caused.

RETROSPECTIVE AGE LIMITS UNDER SURROGACY LAW VIOLATE REPRODUCTIVE AUTONOMY: SC

Parenting abilities cannot be invoked retrospectively to restrict their reproductive choice, the Supreme Court on Thursday ruled that the age limits under the Surrogacy (Regulation) Act, 2021, do not apply to couples who had frozen their embryos and initiated the surrogacy process before the law came into force on January 25, 2022.

A Bench of Justices B.V. Nagarathna and K.V. Viswanathan delivered concurring opinions while hearing applications filed by three couples who argued that they had created and preserved

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embryos long before the enactment of the 2021 law and were therefore, unfairly disqualified by the subsequent age limits.

Under the Act, an intending couple is eligible for surrogacy only if the woman is between 23 and 50 years of age and the man is between 26 and 55 years.

The petitioners contended that these limits could not retrospectively disqualify those who had already completed the medical procedures culminating in embryo freezing.

Justice Nagarathna observed that the law should not draw a distinction between couples who conceive naturally and those who require medical assistance to do so.

The Bench clarified that it was not “questioning the wisdom of Parliament” in imposing age limits or examining the validity of those restrictions but was confined to the issue of their retrospective application.

It also held that the exemption would extend to cases where embryos were created and frozen before the commencement of the Act, even if implantation in the surrogate’s womb had not yet taken place.

WHY IS A SPECTRE OF EMPTY CLASSROOMS LOOMING?

The story so far:

The State of Tamil Nadu has sought a review of a Supreme Court judgment requiring in-service teachers from Classes 1-8 in non-minority schools across the country to clear the Teachers’ Eligibility Test (TET) in two years or be “compulsorily retired”. Other States have equally voiced concern about the September 1 judgment and its harsh lesson to lakhs of teachers validly employed in government, aided, unaided and private schools mentioned under Section 2(n) of the Right of Children to Free and Compulsory Education (RTE) Act, 2009. They are likely to follow Tamil Nadu to the top court.

What is the situation in Tamil Nadu?

Tamil Nadu alone employs 4,49,850 teachers in government and aided schools, of whom 3,90,458 are not TET-qualified. The States have argued that if the judgment is implemented, the entire school system faces the imminent prospect of collapse, with mass disqualification of teachers and denial of classroom instruction to millions of children. Tamil Nadu argues that the judgment provokes a direct conflict with Article 21A (fundamental right to free and compulsory education for children aged six to 14) of the Constitution. The State has sought a balance between ensuring quality of education and safeguarding the right to education.

What did the judgment mandate?

The two-judge Bench of Justices Dipankar Datta and Manmohan is not unaware of the ground realities. Justice Datta, who authored the September 1 judgment, acknowledged the contributions of non-TET qualified teachers appointed prior to the RTE Act. The court agreed that dislodging elementary school teachers was a “bit harsh” as they have taught students for decades without any serious complaints. Hence, the court, invoking Article 142 of the Constitution, has exempted teachers with less than five years left to retire from taking the TET. However, they would have to clear the TET if they seek promotion. But teachers who have more than five years of service must



mandatorily qualify for the TET within two years from the date of the judgment. If they fail, they would have to quit service or be retired with terminal benefits.

Future appointments or promotions for teachers in non-minority schools would necessarily require TET qualification.

Further, the two-judge Bench judgment referred to a larger Bench the question whether minority educational institutions ought to be also included under the purview of the RTE Act. The court noted that the minority status was being misused by school managements to circumvent the mandate of the RTE Act to have TET-qualified teachers conduct elementary education. The judgment was based on a batch of appeals questioning school education departments' insistence on faculty clearing the TET in minority institutions.

The two-judge Bench criticised a 2014 Constitution Bench judgment in the Pramati Educational and Cultural Trust case, which took minority institutions entirely outside the ambit of the RTE Act. The September 1 judgment made a strong pitch to bring schools run by minorities — whether religious or linguistic — into the RTE fold as the 2014 judgment had “unknowingly jeopardised the very foundation of universal elementary education”. It said the exemption of minority institutions from the RTE Act has led to “fragmentation of the common schooling vision and weakening of the idea of inclusivity and universality envisioned by Article 21A”.

What do the review petitions argue?

Review petitions filed by Tamil Nadu and a Kerala-based teacher's union, Deseeya Adhyapakha Parishad (NTU) Kerala, argues that “even if the objective of enhancing teaching quality is accepted as legitimate, compelling pre-RTE Act appointees to pass TET on pain of disqualification is manifestly disproportionate”. Tamil Nadu recommended “less intrusive alternatives” like in-service training, capacity building, refresher courses, or bridging programmes to achieve the same goal without destabilising the education system.

At the centre of the controversy is the interpretation of Section 23 of the RTE Act. As per 23 (1), the National Council for Teacher Education (NCTE) has laid down minimum qualifications for a person to be eligible for appointment as a teacher in Classes one to eight, through its notification on August 23, 2010. An essential qualification is passing the TET conducted by the appropriate government. The rationale for including the TET is to bring national standards and the benchmark of teacher quality in the recruitment process.

In its review petition, Tamil Nadu contended that Section 23(1) would apply only to future recruitment of teachers. The State refers to Section 23(2) which empowers the Centre, through notification, to relax the minimum educational qualifications for appointment of teachers for a limited period not exceeding five years in case States have to deal with contingencies of dearth of teachers or institutional shortages. A proviso appended to Section 23 also makes it clear that any teacher who, at the commencement of the RTE Act, did not possess the minimum qualifications (TET) must acquire such qualifications within a period of five years. Section 23 does not call for a “blanket mandate” for TET nor could the interpretation of the provision be stretched to retrospectively disqualify teachers who were validly appointed before the notification of minimum qualifications (TET), Tamil Nadu submitted in its review plea.

The State said the September 1 judgment raises the spectre of “empty classrooms” and distracted teachers scrambling to save their livelihood for the next two years.



UPSC SET TO RELEASE ANSWER KEYS AFTER CIVIL SERVICE PRELIMS

The Union Public Service Commission (UPSC) has conveyed to the Supreme Court its decision to release provisional answer keys after the Civil Services preliminary examination.

The decision, conveyed to the top court in an affidavit, signalled a move away from the earlier practice of publishing keys only after the year-long recruitment cycle.

The affidavit, filed in a petition by Himanshu Kumar, represented by senior advocate Devadatt Kamat and advocates Rajesh G. Inamdar and Shashwat Anand, informed the court that the provisional keys would be released after the prelims to facilitate candidates to raise representations or objections, which would be placed before a team of subject experts who would conduct an in-depth consideration and finalise the answer keys.

The final answer key would naturally be released after the publication of the final results, UPSC said.

The petitioner's counsel, however, responded that the affidavit did not clarify the redress measures for candidates who appeared in the prelims in May, when no provisional keys were provided, leaving aspirants uncertain about retrospective remedies such as re-evaluation or objection windows.

This development followed an earlier petition filed on August 11, when 28 Civil Services aspirants approached the Supreme Court against the UPSC's "opaque" answer key policy for the 2025 Civil Services prelims.

'Undermined fairness'

Mr. Kamat and Mr. Anand had argued that the "delayed release of answer keys undermined transparency and fairness in the examination process".

A Bench headed by Justice P.S. Narasimha is considering detailed rules for future UPSC exams, including timelines for answer key releases and objection processes.

TOP COURT ISSUES NOTICE ON PLEA TO REMOVE ASSAM BJP'S VIDEO 'VILIFYING' MUSLIMS

The Supreme Court on Tuesday issued notices to social media platform X and the Assam unit of the Bharatiya Janata Party (BJP) on a plea seeking the removal of an AI-generated video that portrays a pejorative scenario of Assam being "taken over" by Muslims if the BJP loses the upcoming Assembly elections.

A Bench of Justices Vikram Nath and Sandeep Mehta heard the matter and issued notices to both X and the BJP's Assam unit.

Advocate Nizam Pasha, appearing for the applicant, told the court, "A video has been posted as part of the upcoming election... it shows that in case a certain political party does not come to power, a certain community will take over... it shows people with skullcaps and beards." He urged the court to initiate appropriate penal action against those responsible for circulating the content.

The application, filed through advocate Lzafeer Ahmad, stated that the video posted on September 15 from the official X handle of the BJP's Assam unit depicts visibly Muslim individuals taking over



key landmarks in Assam, including tea estates, Guwahati airport, Rang Ghar, and government lands.

“The video shows the gross failure as well as the complete disregard of secular values that the ruling dispensation of any State of our country is bound to uphold,” the application said.

It argued that the video “openly targets, vilifies and demonises Muslims”, suggesting that “the worst fate that a State can be met with is its takeover by Muslims”. Accordingly, it sought directions for the immediate removal of the video from X to prevent “further communal disharmony”.

According to the application, as of September 18, the post had been reposted over 6,100 times, liked 19,000 times, and viewed 4.6 million times.

WHAT WAS BEHIND THE ‘I LOVE MUHAMMAD’ MOVEMENT?

The story so far:

On September 4, in Kanpur’s Rawatpur area, a few young men put up a lightboard at the entrance of a lane in Syed Nagar on the procession route with the words, ‘I Love Muhammad’, written in English. It was put up as part of celebrations around the Prophet’s birthday. Some Hindu groups claimed it was in contravention of rules of religious processions in the State. A scuffle ensued and after FIRs were filed against 15 unidentified people and nine identified persons, the row spread to other cities of Uttar Pradesh before brimming over to other States. It soon developed into a debate on the right to freedom of religion.

What happened?

While Kanpur witnessed little violence, Bareilly saw protests as well as the use of bulldozers on the private properties of some of those allegedly involved in the violence, including the son-in-law of Ittehad-e-Millat Council chief Maulana Tauqueer Raza Khan, on whose call a thousand Muslims had gathered at Islamia grounds on September 26, to protest against the State’s alleged high-handedness in Kanpur. The police, after initially permitting the protest, withdrew it shortly before the prayers. Though Mr. Khan made a belated appeal to followers to disperse following the denial of police permission, many people had already gathered. The police resorted to lathi-charge to disperse the protestors. Next day, private properties of Mr. Khan’s relatives and a doctor said to be close to him were destroyed.

Residents of Unnao too, found themselves in similar hot waters with local Muslim youth organising processions holding ‘I Love Muhammad’ placards and chanting religious slogans. Clashes were reported as the police objected to the use of boards with the said slogan. It led to eight FIRs and arrests of five individuals. Meanwhile, in Maharajganj, police did not give permission for a procession leading to further alienation of local residents who read in the police action a denial of their right to freedom of religion. The police action did, however, thwart the possibility of any violence.

What about other States?

In the neighbouring State of Uttarakhand, Muslim residents alleged that police response was disproportionate to a peaceful march where the protestors held up placards with ‘I Love Muhammad’ written on them and called for the cancellation of FIRs in Kanpur.



Soon the row spread to Gujarat, Maharashtra and Madhya Pradesh before hitting Telangana, the first non-BJP-ruled State to report a problem around the slogan. By then, 'I Love Muhammad' posters had spread across the country with people using the slogan as part of their social media handles. It is being seen as the Muslim community's response to the allegedly excessive use of force first by the U.P. police followed by its counterparts in other States.

What lies ahead?

What began as a localised dispute in Kanpur grew into a nationwide debate on freedom of expression, right to equality and freedom of religion. The Association for Protection of Civil Rights, which investigated the controversy, found that 21 FIRs were lodged, over 1,324 individuals from the Muslim community booked, and 38 people arrested in Uttar Pradesh and other States.

The Jamaat-e-Islami Hind has called for the cancellation of FIRs against members of the community and dubbed the criminalisation of the 'I Love Muhammad' slogan ultra vires as it went against Articles 19, 21 and 25 of the Constitution. Meanwhile, the All India Muslim Personal Board called for the immediate release of Mr. Khan and others. A delegation led by the Leader of the Opposition in Uttar Pradesh, Mata Prasad Pandey, was restrained from reaching Bareilly. The Samajwadi Party MP Iqra Hasan was also detained by the police and Sambhal MP Ziaur Rehman Barq was placed under house arrest.

VOTE OF CONFIDENCE

Bihar will vote in two phases, on November 6 and 11, to elect a new Assembly, with counting on November 14. The Bihar Assembly election of 2025 is important not only for political reasons but also for the reasons of electoral integrity in India, which is facing a crisis. The Election Commission of India (ECI) is cognisant of the high stakes in Bihar, and for good measure, the Chief Election Commissioner, Gyanesh Kumar, described it as the 'mother of all elections'. The ECI also listed 17 measures, beginning with Bihar, that could improve voter participation and public trust in the process. The average number of eligible voters in a polling station will be 819, and the highest number of voters in a booth will now be 1,200 compared to 1,500 earlier. The ECI has also taken into account concerns raised by political parties and other observers about the electoral process. Counting of postal ballots will be complete before the last two rounds of Electronic Voting Machine (EVM) and Voter-Verifiable Paper Audit Trail (VVPAT) counting. If there is a mismatch between the Form 17C and EVM data, and wherever mock poll data had not been erased, the counting of VVPAT slips will be mandatory. Among other measures are mobile phone deposit facilities at polling stations, and a one-stop digital platform named ECINet, for real-time voter turnout updates. Surprising turns in turnout data have been a matter of serious concern in recent elections, and this measure could help clear the air. Live feed from all booths will be available for monitoring purposes.

The Bihar election has gained a special national significance this time, with the ECI's abrupt announcement of a Special Intensive Revision (SIR) of the electoral rolls which began in June. The ECI sees the process as a "purification" of electoral rolls, with plans to have it across the country. In Bihar's final list, roughly 69 lakh names were removed for reasons such as deaths, unproven citizenship, duplicate entries, or permanent migration to other States. Bihar will be critical for the BJP, the Congress, the RJD and the JD(U), with each party hoping to turn a corner in their journeys. The ruling National Democratic Alliance is at the crossroads with an aging Chief Minister Nitish Kumar who is completing nearly 20 years in office. The BJP may want to formally take over the alliance's reins but it will have to gauge how this might impact the social dynamics. For the



Congress, Bihar will be a test case of its key planks — electoral integrity and social justice. All said, this is one election in which the ECI has the highest stakes, and all those invested in Indian democracy hope to see it come out with flying colours.

ENUMERATOR CAN'T DECIDE CITIZENSHIP: PETITIONERS CITE EC'S 2003 GUIDELINES

Citing the Election Commission's guidelines for the 2003 intensive revision of electoral rolls, which said enumerators were not supposed to determine citizenship of electors, the petitioners who have challenged the EC's Special Intensive Revision (SIR) of rolls in Bihar told the Supreme Court on Tuesday that the 2003 exercise was fundamentally different from the SIR and could not be used as a precedent.

- The petitioners, including the Association for Democratic Reforms, represented by lawyer Prashant Bhushan made a written submission, which included a copy of the guidelines for the 2003 intensive revision (IR) that the EC had not made public so far. They cited The Indian Express report on August 23 that carried details of the 2003 guidelines.
- As per the guidelines, enumerators, who are now called Booth Level Officers, were tasked with going house-to-house to enter the names of eligible electors in 2003.
- In the SIR, the BLOs were required to go house-to-house and provide a new enumeration form to the electors to submit to remain on the rolls, something which was not the case in 2003. At that time the enumerator used to fill out the details of the members of a household on a "record of enumeration" signed by the head of the household.
- In 2003, all electors were not required to submit documents, but enumerators could ask for proof in case of a family shifting to a locality from another part of the country or if they had a doubt about age or ordinary residence.
- They said while Bihar's adult population was estimated to be 8.22 crore in 2025, the number of electors was 7.42 crore, meaning that 10% of the adult population was not registered to vote.
- The gender ratio of electors had gone down from 932 females to 1,000 males in the electoral roll as of January 2025 to 892 after SIR. This, they said, "translates to 17 lakh missing women". Using name recognition software, they said the analysis showed that while Muslims made up about 17% of the population of Bihar, they accounted for 25% of the names deleted at the draft stage and 34% of the deletions in the final roll published on September 30.

Do You Know:

- The Constitution of India came into effect on January 26, 1950. However, it's worth noting that the sections regarding citizenship were only put into effect on the day of the Constitution's adoption, which was November 29, 1949.
- The Constitution introduced a unified form of citizenship, known as national citizenship, without the existence of separate citizenship based on states.
- Although the term citizenship is not explicitly defined in the Constitution, Articles 5-11 outline the framework for citizenship at the time of the Constitution's commencement.



- These provisions delineate the methods of acquiring citizenship, such as birth, domicile, and descent, as well as circumstances that disqualify individuals from obtaining Indian citizenship.

WHERE BIHAR'S ECONOMY STANDS

- Like every other Indian state, Bihar needs to create jobs for its residents – 3.16 crore Biharis have registered on the government's e-Shram portal in search of jobs, second only to Uttar Pradesh.
- And if jobs are not found within the state, they will keep looking for employment elsewhere. This continued out-migration in search of work reduces the possibility of the state being able to reap a return on its investments.
- As per latest data from the government's Periodic Labour Force Survey (PLFS), while Bihar's unemployment rate in the April-June quarter was a fairly low 5.2 per cent, compared to the all-India average of 5.4 per cent for those aged 15 years and above, this was largely due to the Labour Force Participation Rate (LFPR) in the state being just 48.8 per cent.
- It means that less than half the working-age population of the state was actively looking for work. Only Haryana and Delhi had lower LFPRs.
- It gets worse when one considers the youth, or those falling in the 15-29 age bracket – in Bihar, only 33.9 per cent of them are looking for jobs. This is not only significantly lower than the all-India average of 42 per cent, but also the lowest in the country.
- As per Bihar's budget for 2025-26, the state expects to spend Rs 1.12 lakh crore on salaries, pensions, and interest on its loans. These expenses are called 'committed expenditure' – they cannot be postponed. The problem is that these committed expenses make up nearly 40 per cent of the government's total expenditure.
- Of course, there are several states that use up more than 40 per cent of their total expenditure on salaries, pensions, and interest payments. But it is safe to say the addition of a guaranteed government job per household will not burnish the state's finances.
- Government jobs have not been the only promise offered to voters so far. Cash transfers to women, which worked exceedingly well for the ruling BJP-led National Democratic Alliance (NDA) in previous state elections, have appeared in Bihar as well.
- Whether or not these schemes are 'freebies' – the word has no legal definition – is irrelevant; what we do know is that they will all add to the state's expenditure, specifically, revenue expenditure.
- At a time when the central government is pushing hard on capital expenditure and calling on the private sector to invest more, it should be a concern if Bihar's revenue expenditure as a percentage of total expenditure rises.
- The sector powering the rest of the country – services – has shrunk in Bihar. According to statistics ministry data, the net value added by Bihar's services sector has reduced as a percentage of the total net state value added to 54.8 per cent in 2024-25 from 61.2 per cent in 2019-20.



- While a rising share of the secondary sector is good for Bihar, India's growth story over the last two decades or so has been about the services sector, which can offer high-paying jobs – which is key to retaining good local talent.

Do You Know:

- According to the NITI Aayog, at 33.76 per cent, Bihar had the highest proportion of multidimensionally poor people in the country in 2019-21. Even if measured in consumption terms, an updated version of the Rangarajan poverty line – constructed by economists from the Reserve Bank of India (RBI) – shows that for urban Bihar, the minimum Monthly Per Capita Consumption Expenditure (MPCE) needed to not qualify as poor in 2022-23 was Rs 2,277 – the third lowest in the country. For rural areas, the figure was Rs 1,724, which was the sixth-lowest.
- Labour force participation rate refers to the part of the population that supplies or offers to supply labour for pursuing economic activities for the production of goods and services and therefore, includes both 'employed' and 'unemployed' persons. Under the CWS approach, labour force refers to the number of persons either employed or unemployed on an average in a week before the date of the survey. LFPR is defined as the number of persons/ person-days in the labour force per 1000 persons /person-days

RELEASE WANGCHUK

The basis of good governance and democracy is that it provides enough leeway and wherewithal to address issues related to national security. The smart way to address a problem that started as a legitimate demand for greater autonomy in governance is not by misusing laws that allow for preventive detention against peaceful dissenters but by finding a route to defuse it. That does not mean that those who indulged in violence and arson in Ladakh during the protests for Statehood and Sixth Schedule status should be spared the long arm of the law. Yet, the Centre's detention of climate activist and social reformer Sonam Wangchuk under the National Security Act (NSA), in response to the protests, is wrong. Mr. Wangchuk has been a consistent and peaceful advocate for the legitimate democratic aspirations of Ladakh, which have found resonance across Leh and Kargil districts, as well as religious, ethnic and political identities. His recourse to non-violent dissent, with sustained agitations for a legislature to address Ladakh's environmental and livelihood concerns, is in keeping with the historical ethos of Indian politics established during and after the freedom movement. Invoking a law that is intended to counter a threat to the security of the Indian state against a peaceful dissenter reveals a problematic intolerance for democratic expression.

In recent judgments, the Supreme Court of India has repeatedly clarified that a clear distinction must be made between a "law and order" issue and a threat to "public order". The NSA, which is meant to address "public order", pertains to acts that disturb "the even tempo of the life of the community". There is no evidence to suggest that Mr. Wangchuk's activism reaches this benchmark. The Centre appears to have failed to apply its mind and reach a "requisite subjective satisfaction", as demanded by the Court, to show that his actions posed any real threat to "public order". The Centre's response has clearly sought to conflate dissent with acts akin to sedition. Mr. Wangchuk's case is not an isolated one, as in the past, similar Acts were used to stifle dissent and bypass due process, as was the case with the detention of Kashmiri politicians following the abrogation of the special status of erstwhile Jammu and Kashmir. Ladakh's aspiration for self-governance is genuine and requires the Centre's nuanced and empathetic response, more so as it



is a sensitive border region. The Centre must revoke Mr. Wangchuk's detention immediately and re-engage in a meaningful dialogue with the people of Ladakh. Not doing so will only precipitate another crisis.

NEPAL GENZ PROTESTS IN MIND, DELHI POLICE CHIEF ASKS UNITS TO PREPARE 'CONTINGENCY PLAN'

Against the backdrop of the recent Gen Z protests in Nepal, which spiralled into violence and forced a regime change, Delhi Police Commissioner Satish Golchha is learnt to have directed three units — the Intelligence branch, Operations unit and Delhi Armed Police — to draft a “contingency action plan” to deal with a similar situation if it were to arise in the national capital.

- In a recent meeting, Golchha is also learnt to have asked two Special Commissioners of Police to form a committee to conduct an audit of their inventory of non-lethal weapons and to suggest if more such weapons or technology are required.
- Senior officers said the development comes keeping in mind the fact that “large-scale, youth-driven, leaderless demonstrations — similar to the ones witnessed in Kathmandu and other parts of Nepal — could spill over into India or inspire parallel mobilisations in Delhi”.
- In the recent meeting with all Special CPs, Golchha is learnt to have discussed the situation in Nepal. “After a brainstorming session, he directed the Special CP of the Intelligence Division to work along with two other Special CPs — Delhi Armed Police and Operations — to prepare a detailed contingency action to handle such a situation. He asked him to put up this contingency action plan in the coming days,” a senior police officer said.
- The instructions, issued a few days ago, call for coordinated preparedness between the district police units, cyber cell, and the Central Armed Police Forces (CAPFs). Police sources indicated that draft measures include enhanced monitoring of border movements, extensive use of drone surveillance in sensitive areas, and quicker coordination with paramilitary forces in case of large gatherings.

Do You Know:

- When dealing with cases concerning the right to protest in the past, the Supreme Court has traced it to Article 19(1) of the Constitution of India. Specifically, it has held that the right to freedom of speech and expression and to assemble peacefully without arms gives people the right to protest peacefully.
- However, the court has often been tasked with balancing it with the “reasonable restriction” of maintaining public order under Article 19(2).

CRIME PATTERNS

The National Crime Records Bureau's annual reports on crime and prison statistics have to be read with a strong caveat — most of the numbers cannot be compared between States because they are largely dependent upon the registration/reporting of crimes in the first place. However, certain national trends and sharp year-on-year changes within States can still reveal meaningful patterns that could demand policy intervention. The recent NCRB report for 2023 — delayed by a year — points to a worrying trend of postponed surveys, reports and even the Census under the current Union Government. But there are also three telling numbers: the 2.8% decrease in murder



cases across the country; a staggering 28.8% surge in crimes against Scheduled Tribes (ST), and a 31.2% increase in cyber crimes. While the decrease in murder cases will come as a relief to law enforcement — most of the cases pertain to disputes, personal vendetta or enmity and “gain” — the other two numbers are alarming. The steep rise in crimes against STs is largely due to the ethnic violence in Manipur, with the registered numbers jumping from just one in 2022 to 3,399 in 2023 — which a more effective government could have mitigated. Madhya Pradesh and Rajasthan also recorded significantly high crime rates against tribals suggesting their vulnerability in the central Indian States. This is not a new phenomenon; previous NCRB reports have highlighted higher crime rates in regions with significant tribal populations.

With greater Internet penetration across the country, there has been an increase in cybercrime, particularly related to financial fraud and sexual exploitation. Anecdotally, it is evident that these numbers must have gone up even further in the last two years with the greater use of digital financial instruments in daily transactions and investment. While policing has tried to keep up with the growing menace of cybercrime, with specialised cells, the ubiquitousness and deepening spread of digital crimes require more sophistication and dedication by the police to tackle them. Crimes against children rose by 9.2% in 2023 — with the offender known to the victim in 96% of the cases. While the increase could be a function of improved reporting across States, the high number (1,77,335 cases) suggests that States must work on a war footing to sensitise children about these crimes and inappropriate behaviour by adults. A subset of these crimes could also include the application of the POCSO Act in the case of consensual adolescent relationships and this is an area that needs to be carefully handled by the prosecuting and policing agencies. Reported crimes against women registered a modest increase of 0.4%, but this masks a 14.9% spike in dowry-related crimes, pointing to a persistent societal problem.

CRIMES AGAINST CHILDREN SURGE IN ASSAM, RAJASTHAN, AND KERALA

In 2023, cases of crimes against children recorded the sharpest rise in three States — Assam, Rajasthan and Kerala, according to the latest data from the National Crimes Records Bureau.

In Assam, recorded cases of crimes against children surged by nearly 100% — from an average of around 5,100 cases between 2018 and 2022 to more than 10,000 in 2023. In Kerala, the number increased by 106% — from an average of more than 2,800 cases between 2018 and 2022 to more than 5,900 cases in 2023. In Rajasthan, the number increased by 70% — from an average of 6,200 cases between 2018 and 2022 to more than 10,500 cases in 2023.

In comparison, overall recorded cases of crimes against children in India increased by 25% in that period.

In Assam, a record crackdown on child marriage led to a sharp rise in the number of cases filed under the Prohibition of Child Marriage Act, 2006. In fact, a close look at Assam’s crime data against children shows that the spike was driven almost entirely by this State-led intervention. Between 2020 and 2022, about 150 cases were recorded annually in Assam under the Prohibition of Child Marriage Act; this increased to 5,267 in 2023. That year, cases related to child marriage accounted for nearly 52% of all crimes against children in the State, a dramatic jump from 3-4% in the preceding years.

In Rajasthan, two key factors appear to have driven the rise. The first is the sudden shift in the way offences against children were categorised — from only non-POCSO sections to specific POCSO provisions. POCSO refers to the Protection of Children from Sexual Offences Act, 2012. In



2021 and 2022, over 2,700 cases were filed separately under the rape provision (Section 376 of the Indian Penal Code). However, in 2022 and 2023, no cases were filed independently under this section; instead, there was a corresponding rise in cases registered under the relevant POCSO provision. Cases filed under Sections 4 and 6 of the POCSO Act read with Section 376 of the IPC increased from just three in 2021 and 2022 to more than 3,500 in 2022 and 2023. This shift — from filing cases solely under IPC provisions to invoking relevant sections of the POCSO Act — was seen across the country, but was most pronounced in Rajasthan.

It should be noted that the more accurate classification of child rape cases occurred alongside an actual increase in such offences in Rajasthan — from about 2,700 to 3,500 cases. However, whether this rise is primarily due to proper classification or an actual increase in offences is an open question.

The second is that there was a sharp spike in cases related to the kidnapping and abduction of children. In Rajasthan, cases filed under various sections related to the kidnapping and abduction of children rose sharply, with their share in total crimes against children climbing to over 54% in 2023 — a steep increase.

There was a surge in POCSO cases in Kerala too. The increase appears partly linked to more accurate classification of offences under specific POCSO sections, accompanied by an increase in the reported cases.

It is important to note that the rise in cases, particularly those involving crimes against children, may indicate improved reporting, rather than a genuine increase in the incidence of such crimes.

NATURAL FORCES LIKE LIGHTNING, HEAT KILLED 6,444 IN 2023: NCRB REPORT

Forces of nature such as lightning strikes, floods, cold, heat stroke, and landslides claimed 6,444 lives, as per the National Crime Records Bureau's 2023 report on Accidental Deaths and Suicides in India. Lightning strikes alone accounted for 39.7 percent or 2,560 of these 6,444 deaths.

- Heat/sun stroke claimed 804 lives, exposure to cold claimed 733 lives while floods, landslide, and torrential rains were other key causes of deaths under the 'forces of nature' category, as per the report.
- Snake bites, animal attacks and insect bites were the other nature or environment related causes that claimed a substantial number of lives. As per the NCRB report, snake bites caused 10,144 deaths, a 0.6 percent increase over the 10,085 deaths recorded in 2022.
- Meanwhile, 1,739 people were killed by animals and 1,172 due to animal, reptiles (other than snakes) or insect bites, the report noted.
- While the overall number of deaths due to 'forces of nature' declined by 20 percent compared to 2022 figures, deaths caused by heat stroke and cold exposure have risen by 10 percent, and 1.8 percent, respectively.
- Odisha recorded 1,351 deaths, the highest due to 'forces of nature', followed by 852 in Uttar Pradesh, 789 in Madhya Pradesh, 679 in Bihar, 401 in Jharkhand and 312 in Maharashtra.
- According to the report, Madhya Pradesh (397), Bihar (345), Odisha (294), Uttar Pradesh (287), and Jharkhand (194), accounted for a high share of the lightning deaths.



- Studies have shown in the past that the plains area of the Indo-Gangetic belt, as well as Madhya Pradesh are prone to thunderstorm and lightning activity. Warm, dry air from north-west converges with moist air from the Bay of Bengal leading to formation of deep convective clouds.
- In 53 cities, 602 deaths were due to natural forces in 2023, the report noted, and heat and cold exposure accounted for 21.1 percent and 19.6% per cent of these deaths.
- India had seen a prolonged heat wave in 2023 in northern, eastern and north west India. In June 2023, Ballia and Deoria in Uttar Pradesh had seen over 150 deaths due to an intense heat wave.
- Scientifically, lightning is a rapid and massive discharge of electricity in the atmosphere some of which is directed towards earth. The discharges are generated in giant moisture-bearing clouds that are 10-12 km tall.
- The base of these clouds typically lie within 1-2 km of the Earth's surface, while the top is 12-13 km away. Temperatures in the top of these clouds are in the range of -35° to -45°C .
- As water vapour moves upward in the cloud, the falling temperature causes it to condense. As they move to temperatures below 0°C , the water droplets change into small ice crystals.
- They continue to move up, gathering mass until they are so heavy that they start to fall to Earth. This leads to a system in which, simultaneously, smaller ice crystals are moving up and bigger crystals are coming down.
- Collisions follow and trigger the release of electrons, a process that is very similar to the generation of sparks of electricity. As the moving free electrons cause more collisions and more electrons, a chain reaction ensues.
- This process results in a situation in which the top layer of the cloud gets positively charged, while the middle layer is negatively charged. The electrical potential difference between the two layers is huge, of the order of a billion to 10 billion volts. In very little time, a massive current, of the order of 100,000 to a million amperes, starts to flow between the layers.
- While the Earth is a good conductor of electricity, it is electrically neutral. However, in comparison to the middle layer of the cloud, it becomes positively charged. As a result, about 15%-20% of the current gets directed towards the Earth as well. It is this flow of current that results in damage to life and property on Earth.

IN HARYANA, DEATH OF A POLICEMAN AND QUESTIONS OF IMPUNITY

Were it not for the tragic circumstances of his death, Y Puran Kumar would have been seen as an example of social mobility and of the upholding of the Indian Constitution's promise of equality. He was a Scheduled Caste (SC) Indian Police Service officer of the Haryana cadre; his wife, Amneet P Kumar, is an SC IAS officer, and his brother-in-law is an MLA in Punjab. On the face of it, Kumar and his family had reached the upper echelons of government and politics. His suicide and the eight-page note he leaves behind, which alleges systemic discrimination, including by senior IPS officers, however, casts a shadow on that image. It also raises disturbing questions about entrenched biases that cramp and distort institutional spaces. These questions must be addressed, not evaded.



The allegations of “mental and administrative torture” and “caste-based discrimination, public humiliation, targeted mental harassment and atrocities” by senior officers in Haryana in Kumar’s dying declaration must be probed. The National Commission for Scheduled Castes (NCSC) has directed the Chief Secretary and Director General of Police, Chandigarh, to submit an action taken report in seven days. The state government and police must investigate Kumar’s suicide urgently, in a transparent manner. The temptation to close ranks in the face of public and judicial scrutiny must be avoided. Issues of embedded prejudice and discrimination and their effect on the mental health of those at the receiving end are too important to be brushed under the carpet. This must be a moment for reflection and introspection for the police.

Caste is a proven fact in crime and punishment in India. The Status of Policing in India Report (2025) by Common Cause and Lokniti found that victims of torture are “most often from marginalised communities” and that police personnel across states see certain SC and ST communities as “criminal”. The survey also found that “one in every four Scheduled Caste (SC) police personnel think that Dalits do not get justice”. The caste-based, and even casteist, nature of policing in India is an unfortunate remnant of a colonial structure that urgently needs to be consigned to the past. Doing so, however, is easier said than done, and requires police forces — particularly at the leadership level — to be open and sensitive as they turn the searchlight inwards. Kumar’s death and his allegations must not be swept under the institutional carpet. The Haryana police cannot allow discrimination to go unchecked and unpunished within.

FACED WITH A BULLY, PARTICIPANTS OF MISS RISHIKESH STOOD TALL

On October 3, when Raghvendra Bhatnagar, president of the Rashtriya Hindu Shakti Sangathan, barged into the venue where rehearsals for the Miss Rishikesh pageant were taking place, demanding that the event be cancelled because it went against Uttarakhand’s “sanskriti”, the scene could have unfolded in a dispiritingly familiar way. It has, after all, happened many times before: Self-appointed guardians of morality muscle into spaces that they believe are the sites of violation of an imagined code. Those attacked, believing they have little choice, give in. What sets the Rishikesh incident apart is the heartening response of the pageant contestants.

Faced with a bully, they stood tall, refusing to fold away their aspirations and insisting on their right to choose their way. The would-be disruptor was forced to abandon his campaign, the event proceeded as planned the next day and a new Miss Rishikesh was crowned. The victory is small, but all the sweeter for coming at a time when there has been an intensification of the push to impose a monolithic view of Indian history and culture, targeting individuals who stray beyond arbitrarily drawn lines, and seeking to clamp down on films, books and art. The refusal to be daunted in Rishikesh signals that the voices of those who are pushed to the corners will, slowly but surely, rise over the clamour of the bullies in the room. They will speak forcefully — as the young women in Rishikesh did — of and for their right to be free, and to choose.

The story in Rishikesh is also about the irresistible rise of India’s women, their pursuit of independence and fulfilment. Women have long been policed and forced to shrink to fit mandated roles. Their movements have been monitored and their lives controlled, in the name of upholding morality and also, insidiously, for the “protection” of the women themselves. Things are changing, as women occupy a little more space in the public sphere every day, as they fill up classrooms and set up companies. By standing up to the bully, the young women in Rishikesh have made the load a little lighter for others like them.



ENERGY WEAPONS, SATELLITES, RADAR NETWORK KEY TO 'SUDARSHAN CHAKRA' AIR DEFENCE SHIELD

India's Mission Sudarshan Chakra will create a nationwide air defence shield by linking 6,000 to 7,000 radars (to track hostile targets far beyond the horizon), satellites (to keep constant watch from space), and DEWs or directed energy weapons (laser-based systems designed to destroy enemy threats). These, along with other surveillance and defence platforms, will feed into one integrated network.

- According to sources, the armed forces, paramilitary forces, defence PSUs, the private sector and several R&D bodies will be part of the project. Strategic locations to be covered by the system have already been identified, sources said.
- The multilayered air defence shield is aimed at monitoring, detecting, identifying and destroying enemy threats directed at India. Currently, the country's air defence infrastructure is largely focused on protecting critical military installations and strategic assets. Sudarshan Chakra will extend this coverage significantly to key locations and population centres across the country.
- As India looks to augment its space surveillance capabilities for the defence forces, work is already underway to deploy 52 new surveillance satellites by 2030 under Phase 3 of the Space-Based Surveillance (SBS) programme.
- These will be linked with smaller air defence assets and radars under Sudarshan Chakra, scanning and tracking enemy aircraft, drones or missiles, and cueing weapon systems for interception.
- Multiple radar systems, including Over-the-Horizon (OTH) radars capable of looking deep into enemy territory, are planned to be procured and integrated into the shield to detect and track hostile aircraft, drones and missiles, and to direct their destruction through linked weapon systems.
- Indigenously developed directed energy weapons (DEWs), which use high-powered lasers to neutralise targets, will also be part of the network. Sources said the multilayered shield would be designed to counter aerial threats at both strategic and tactical levels.
- Satellites, OTH radars and DEWs will be integrated with long- and medium-range missile systems, anti-drone technologies and air defence guns, creating layered protection against a wide range of threats.
- Most of these platforms are planned to be designed and built in India, though existing weapon systems from global manufacturers will also be folded in to form a consolidated, nationwide defence.

Do You Know:

- The Defence Research and Development Organisation (DRDO) has also taken early steps. Last month, it successfully tested the Integrated Air Defence Weapon System (IADWS), which combined Quick Reaction Surface-to-Air Missiles or QRSAM (for intercepting hostile aircraft), Very Short Range Air Defence or VSHORADS missiles (for close-range threats) and a 5-kilowatt laser.



- **QRSAM:** QRSAM is a short-range Surface to Air Missile (SAM) system, primarily designed to provide a protective shield to moving armoured columns of the Army from enemy aerial attacks. The entire weapon system is configured on highly mobile platforms. It has search and track capability and can fire on short halts. The system has an operation range of three to 30 kilometers.
- **VSHORADS:** VSHORADS is a fourth-generation, technically advanced miniaturised Man Portable Air Defence System (MANPAD). The DRDO has said that the missile system has the capability to meet the needs of all the three branches of the Armed Forces — Army, Navy and Air Force.

INDIA'S SMR AMBITIONS GET A PRIVATE SECTOR BOOST

Reliance Industries Ltd, Tata Power, and Adani Power are among six private entities that are learnt to have formally expressed interest to set up small modular nuclear reactor-based projects.

- Private companies have shown interest in NPCIL's proposal to set up 'Bharat Small Modular Reactors' or BSMRs, with 16 sites tentatively marked across six states.
- BSMRs will be constructed and operated under NPCIL's supervision; private bidders will hold beneficial rights over the electricity generated for captive use.
- Globally, only two SMR projects have reached operational stage: Akademik Lomonosov floating power unit in Russia and HTR-PM in China.
- The BSMR project aims to help India get into the manufacturing chain of small modular reactors, considered essential for the commercial competitiveness of nuclear energy.
- India has expertise in manufacturing smaller reactor types but the problem is with technology compatibility; most dominant reactor type is PWR (light-water reactor).
- India's SMR prototypes (by BARC) include three reactor types; efforts also underway to leverage technology from the US, Russia and others for light-water projects.
- Legislative amendments are being worked on to open up India's civil nuclear sector further to investors and international standards.

Do You Know:

- **Small modular reactors (SMRs):** nuclear reactors with 30MW to 300MW per unit capacity, seen as crucial for future energy competitiveness.
- SMRs are smaller than traditional reactors but can provide substantial low-carbon electricity, useful for industries and can repurpose thermal plants being decommissioned.
- Nuclear offers round-the-clock clean power that offsets limitations of renewables; India is pitching SMRs for decarbonisation and leadership in this technology.



HOW IS AI TRANSFORMING TEACHING AND LEARNING PRACTICES IN INDIAN CLASSROOMS?

The story so far:

The U.S.-based ChatGPT, developed by OpenAI, announced the opening of its first office in India this year. Union Minister for Electronics & Information Technology Ashwini Vaishnaw remarked that India is uniquely positioned to drive the next wave of AI-led transformation. With OpenAI, the India AI Mission aims to build an ecosystem for trusted and inclusive AI. Besides, another U.S.-based company, NVIDIA, a world leader in artificial intelligence computing, had announced a partnership with India's Reliance company in 2023. The global business giants such as Google and Microsoft have invested heavily in AI manufacturing and marketing in India.

Tech-savvy pedagogy

In contemporary India, teaching and learning are tangled in ethical twists and turns as teachers and students are increasingly inclined to AI. Integration of advanced technology and pedagogy is arguably a new age mantra for the technocratic management of education. A report of the Central Square Foundation that works with the Indian government said that about 70% of school teachers in India are tech-savvy. Teachers use AI solutions to design pedagogy and curricular content. This shall solicit a qualitative evaluation of AI literacy and the digital divide in India.

The National Sample Survey report this year provided information about the digital divide at the level of quality and skills. Although a large percentage of the population in India uses the Internet, the logic of inclusion requires participation in the digital world. Inclusion is evaluated through meaningful and relevant use of technology rather than merely usage.

How meaningful is the intervention of AI in the educational world? Does ChatGPT enhance the quality of teaching and learning? These are the questions that ought to be asked while classrooms incorporate ever-evolving AI solutions.

Unbridled AI in educational practices

Contrary to the euphoria, the uncritical embrace of AI threatens the philosophical foundations of teaching and learning. Philosophically, pedagogy entails a humanistic dialogue between the teacher and the student that fosters empathy and trust. The ideal pedagogy in the history of education emphasised the evolution of emancipatory understanding in the classroom. Whether it be the feminist pedagogue Bell Hooks in the contemporary world or Rabindranath Tagore in early modern India, they envisaged a pedagogic alchemy that inspired hermeneutic understanding. The ideal teachers ensured that education was not reduced to the accumulation of information. The educational philosophy solicits a natural and organic rather than singular AI smartness of the teacher and the taught.

There are also ethical dilemmas of using AI for pedagogy. According to a survey by the Centre for Teacher Accreditation (CENTA), a high percentage of teachers employ AI tools in the classroom, more for the fulfilment of technical requirements than for dialogic engagement with students. The use of AI by students has become a concern for the Central Board of Secondary Education in India. The CBSE issued an advisory against using ChatGPT in board exams. Unfair use of the technology by both teachers and students has handicapped the pedagogical essence of classroom interaction between teachers and students. Although AI is enabling, the ethical complexity is seldom a consideration for the technocratic management of educational institutes.



The current educational practices with AI are reduced to superficial use of technology. A teacher using audio-visuals through smartphones and computers in the classroom is mistaken for pedagogic smartness. The transformative capacity of teachers, instead, shall be the yardstick for the evaluation of pedagogy. Only then can AI in the classroom bring about a sense of equality along with improved teaching quality.

India AI mission

India AI's mission envisages the opening of the AI Centres for Excellence (CoE) in education. The mission's pillars are India AI Compute Capacity, geared to establish the infrastructure to support AI innovation, and India AI Future Skills is towards facilitating the talents to utilise the established infrastructure. These pillars can help create accessible cloud-based tools that promote basic digital literacy and equip all teachers with skills to be tech-savvy. However, teachers also require in-service professional training for capacity enhancement to develop an ethical understanding and meaningful integration of AI into pedagogy. Such a training shall enable pedagogues to critically evaluate and employ technology, with a nuanced capacity to transform the educational practices for a just society. The training modules need to prioritise independence and freedom, creativity and imagination, of both teachers and students.

The mission's Application Development Initiative promises impactful AI solutions aimed at large-scale socio-economic transformation. Such promising aspects ought to be emboldened in a context-sensitive manner when it comes to the integration of AI with educational practices. Only then would AI not reproduce the social and digital inequalities through seemingly unquestionable smart pedagogy. Without adequate social, ethical, cultural, and political anchorage, AI may become an anathema defended in rhetoric and abused in practice.

DELHI'S ENGLISH-MEDIUM SCHOOLS TAKE TO HINDI AFTER CBSE'S MOTHER TONGUE PUSH

Following a Central Board of Secondary Education (CBSE) directive mandating the use of "mother tongue" or State language at the foundational level, many English-medium schools in Delhi-NCR are now encouraging students and teachers to speak in Hindi and are conducting activities and events in other languages from time to time.

In line with NEP

In May, the CBSE said the mother tongue or a familiar language should be the first language of literacy (R1). It also said that the State language could be R1 if there were practical considerations such as classroom diversity.

The directive was part of the larger effort to align with the National Education Policy 2020, which emphasises on multilingual education.

Jyoti Arora, principal of Mount Abu Public School in Rohini, said, "Earlier, English-medium schools would teach purely in English. But now, there has been a slight shift in our thoughts, and we have acknowledged that if most families are Hindi-speaking, teachers should teach in Hindi to ensure students understand them completely, especially in the lower classes."

Ms. Arora, however, said the emphasis is still on English as it is a global language. She said that from this academic year, students are learning Sanskrit as their second language, and foreign languages, which were earlier taught as a second language, are being taught in extra hobby classes.



Most CBSE schools in Delhi-NCR are English medium and offer Hindi, Sanskrit, or Urdu as the second language from Class 1, and a third language from a pool of foreign and local languages from Class 6. Several principals said most students picked Hindi as their mother tongue during a language-mapping exercise even though they were from various States because their families have been in Delhi for a few generations. Simultaneously, students are being familiarised with other languages through various activities.

ALL JAL JEEVAN MISSION PIPELINES TO BE MAPPED ON PM GATI SHAKTI PORTAL

The Union government plans to map all drinking water assets including pipelines created under its Jal Jeevan Mission (JJM) on PM Gati Shakti, a Geographic Information System (GIS)-based platform.

- The Department of Drinking Water and Sanitation (DDWS) under the Ministry of Jal Shakti signed on Monday an memorandum of agreement (MoA) in this regard with Bhaskaracharya National Institute for Space Applications and Geo-informatics (BISAG-N), which has developed the PM Gati Shakti platform.
- BISAG-N is an autonomous body registered under the Societies Registration Act, 1860 under the Ministry of Electronics and Information Technology.
- In a statement, the Jal Shakti Ministry said, “The partnership marks a significant step towards the development of a GIS-integrated, decision-support platform for the Jal Jeevan Mission (JJM) and Swachh Bharat Mission (Grameen) [SBM(G)] portals.
- “Under the agreement, BISAG-N will provide end-to-end support including database design, map creation, data migration, software development, and systems integration. The platform will also incorporate advanced features such as ground control surveying, digital photogrammetry, vector data capture, and thematic mapping,” it said.
- “Importantly, the initiative will be aligned with the PM GatiShakti National Master Plan, enabling seamless integration of water and sanitation infrastructure with other sectoral assets. This convergence will help in optimizing resource allocation, improving service delivery, and accelerating infrastructure development in rural areas,” it added.
- According to officials, the DDWS has already undertaken a pilot of mapping pipelines laid under the JJM on the PM Gati Shakti platform and with the signing of the MoA, all drinking water assets created under the JJM will be geo-tagged on this online platform, said a source. Mapping and geo-tagging of the JJM assets on the online platform will ensure better planning and management, said the officials.

Do You Know:

- The government had launched the JJM in 2019, with an aim of providing tap connections to every rural household by 2024. At that time, the ministry had said that out of 17.87 crore rural households in the country, about 14.6 crore households (81.67%) lacked tap connections.
- For this, an overall allocation of Rs 3.60 lakh crore — Rs 2.08 lakh crore Central share and Rs 1.52 lakh crore states’ share — was allocated. The aim was to provide potable water in adequate quantity i.e. 55 litre per capita per day (lpcd) of prescribed quality i.e. BIS Standard of IS: 10500 on regular basis.



- Since the launch of the JJM in 2019, 6.41 lakh water supply schemes, with an overall cost of Rs 8.29 lakh crore, have been approved to provide tap connections to 12.74 crore households. A total expenditure of Rs 3.91 lakh crore has been incurred so far, as per the information available on the JJM dashboard.
- While the mission ended in 2024, Finance Minister Nirmala Sitharaman, in her budget speech on February 1, 2025, announced its continuation with enhanced financial support till 2028.
- Launched in 2021, PM GatiShakti is a digital platform that connects 16 ministries — including Roads and Highways, Railways, Shipping, Petroleum and Gas, Power, Telecom, Shipping, and Aviation — with a view to ensuring holistic planning and execution of infrastructure projects.

WHY MGNREGA NORMS WERE TWEAKED TO PUSH SPENDING ON WATER PROJECTS

The Centre has amended Schedule-I of the Mahatma Gandhi National Rural Employment Guarantee Act (MG-NREGA), 2005, so that a minimum amount is spent on water conservation and harvesting works in rural blocks or subdivisions. The Ministry of Rural Development (MoRD) issued a notification to that effect on September 23.

- As per the MG-NREGA provisions, every state government shall introduce a scheme to provide at least 100 days of guaranteed employment in a financial year to every rural household, based on demand.
- The scheme's minimum features are specified in Schedule-I of the Act, as well as a list of permissible public works that can be undertaken to provide work. While any amendment to the Act requires parliamentary approval, the government can make changes in the schedule through a notification. To date, the schedule has been amended about two dozen times.
- The Centre has now specified the proportion of money to be spent on water-related works. While the existing provision mandated spending on agriculture and allied activities assets at the district level, the new norms have specified minimum spending at the block level, based on their stage of groundwater extraction—"Over-exploited", "Critical", "Semi-critical" and "Safe".
- According to the new norms, in rural blocks categorised as "over-exploited" and "critical" by the Central Ground Water Board (CGWB), a minimum of 65% of the MG-NREGS works (in terms of cost) shall be taken up for water conservation, water harvesting and other water-related works. For the "Semi-critical" and "safe" blocks, the minimum proportion has been fixed at 40% and 30%, respectively.
- The CGWB, under the Ministry of Jal Shakti, classifies blocks into four categories. 'Over-exploited' blocks are where the stage of groundwater extraction is over 100%, meaning that more groundwater is being drawn there than is being replenished.
- Blocks with groundwater extraction between 90-100% are categorised as 'critical', those between 70%-90% are classified as 'semi-critical', while the 'safe' blocks are those having the stage of groundwater extraction equal to or less than 70%.



Do You Know:

- A new study (published in 2024) by the Indian Institutes of Technology Mandi and Jammu has revealed a disturbing truth—the groundwater in Himachal Pradesh’s Baddi-Barotiwala (BB) industrial area is heavily contaminated with cancer-causing pollutants.
- Contaminated groundwater can cause a variety of health problems beyond cancer, depending on the specific pollutants present. Here’s a breakdown of some potential consequences:
 - Heavy Metals: Arsenic, lead, and mercury can damage the nervous system, kidneys, and liver.
 - Nitrate: High nitrate levels can cause methemoglobinemia (blue baby syndrome) in infants, disrupting oxygen flow in the blood.
 - Bacteria and Parasites: Contaminated water can harbor harmful bacteria and parasites, leading to gastrointestinal illnesses like diarrhea, dysentery, and cholera.
 - Fluoride: While essential in small amounts, excessive fluoride can cause dental fluorosis and skeletal problems.

WHY ARE T.N. FOOD OUTLETS OPTING FOR A NEW DELIVERY PARTNER?

The story so far:

App-based food delivery has been facing a shake-up in Tamil Nadu in recent months. Breaking new ground, restaurants from smaller towns such as Namakkal and Cuddalore have logged off popular app-based food delivery giants Swiggy and Zomato. They have instead on-boarded Zaaroz, a lesser-known, homegrown alternative.

Why are restaurants switching platforms?

Restaurateurs cite high commissions, unilateral discounts, and poor communication from the big players as reasons for the platform migration. Restaurants claim they have to pay a commission, sometimes ranging between 30% and 35% plus GST to Swiggy and Zomato. Besides, the apps unilaterally offer deep discounts to customers, denting profits.

In small towns, the hoteliers are largely skilled businessmen but not fully digitally literate. As a result, they are unable to comprehend the terms and conditions they sign up for and are not able to contest the deep discounting tactics. Increasing food prices to cope with consequential losses hasn’t been viable either. As a result, restaurant owners say they end up incurring heavy losses and are forced to wind up their businesses.

What is Zaaroz, and how does it operate differently?

Headquartered in the temple town of Chidambaram — over 230 km north of Chennai — Zaaroz was founded in 2019 by Ram Prasath, a young entrepreneur. It has been operating as an app-based general delivery platform in over 50 Tier-2 and Tier-3 locations in Tamil Nadu with 5,000 vendors on board and serving an estimated eight lakh customers. It has since ventured into the food delivery business.

Unlike the commission-based operations models of Swiggy and Zomato, restaurants are onboarded on the Zaaroz platform for a flat monthly subscription: ₹3,000 plus GST for bigger

4TH FLOOR SHATABDI TOWER, SAKCHI, JAMSHEDPUR



restaurants and ₹1,500 plus GST for smaller eateries, messes, and bakeries. The company also provides electric bikes to delivery executives, and for those using fuel-driven bikes, it offers ₹2 per km towards petrol expenses.

How have restaurateurs responded?

In July, many restaurants in Namakkal — the poultry and lorry body building hub in western Tamil Nadu — logged off Swiggy and Zomato and migrated to Zaaroz. The Namakkal Town and Taluk Hotel Owners Association secretary, N. Arul Murugan, said, “Earlier, the eateries paid ₹20,000 to ₹30,000 as commission to the apps. Now we are able to save 90% of the money.” As a result, he said, restaurants were able to slash menu prices.

Last month, the Cuddalore District Hotel Owners Association also switched over to the new app. Terming these two districts as a “pilot,” Tamil Nadu Hotel Owners Association president Venkadasubbu said the model would be adopted by restaurants across the State, as popular delivery apps were overcharging both hoteliers and customers.

What does the future look like?

The founder of Zaaroz, Mr. Prasath, said the company is expanding to other districts and towns, including Theni and Perundurai.

However, taking on established players with deep pockets, experience, and economies of scale is not easy. In the app-based cab-hailing market, new entrants have struggled to survive against the big players.

The same would hold good for the food delivery business, where patronage needs to be sustained.

In 2021, the Kerala Hotel and Restaurant Association launched its own food delivery app, ‘Rezoy’, charging a flat 10% commission. However, it expanded too quickly from Kochi to Thrissur to Malappuram and collapsed under the pressure.

Attempts by restaurant owners elsewhere to break free from Swiggy and Zomato have met with little success. Zaaroz will face similar challenges in terms of logistics, customer acquisition, driver retention, and platform reliability. It is too early to decide if it will tick all the boxes.

HOW IS INDIA RESPONDING TO CROWDING DISASTERS?

The story so far:

On September 27, a political rally by actor and Tamilaga Vettri Kazhagam (TVK) founder Vijay in Tamil Nadu’s Karur district ended in a fatal crowd crush in which 41 people were killed. Chief Minister M.K. Stalin appointed a one-person commission headed by retired judge Aruna Jagadeesan to examine the tragedy’s causes. He said rules for public events would be framed once the commission submitted its report.

What happened in Karur?

The event was part of Mr. Vijay’s first State-wide political tour. TVK organisers initially presented a list of four central business locations in Karur for the rally, but the police rejected them as they were too congested and instead granted permission for Velusampuram on the Karur-Erode road, where other political parties had previously held events. The organisers said Mr. Vijay would



speak at 12 p.m., and supporters began assembling from 9 a.m. He was delayed however, and as the day wore on, the crowd grew steadily, with several thousands gathering in the evening. By the time Mr. Vijay reached Karur from Namakkal around 6 p.m., his convoy could not access the meeting spot because of the crowd. The congestion worsened when the gathering was forced to make way for his vehicles. Witnesses described having no space to move. Residents also recalled younger people climbing poles and transformers to get a glimpse of the actor while others said the event's timing coincided with evening wage disbursements for textile workers, adding to congestion in the area.

As the programme began around 7.20 p.m., people started fainting in the crowd. When the situation deteriorated further, Mr. Vijay departed from the spot and ambulances began to arrive soon after, taking injured people to government hospitals in Karur, Namakkal, and Tiruchi. By nightfall, dozens were reported dead and scores injured. Many of the 41 people who died were young adults aged 18-30.

What has India done to manage crowds?

At the national level, the Bureau of Police Research and Development (BPR&D) published its most recent Comprehensive Guidelines on Crowd Control and Mass Gathering Management in June 2025. These guidelines, intended for police and other law enforcement agencies, emphasise scientific crowd management practices. The National Disaster Management Authority has maintained its "Managing crowd at events and venues of mass gathering" guide since 2020 alongside "suggestive frameworks" for crowd management plans. These documents recommend advance risk assessment, detailed site layout plans, predetermined ingress and egress routes, real-time monitoring, and communication protocols. The National Institute of Disaster Management (NIDM) has run training modules to handle large congregations as part of its capacity-building programmes.

After the crowd crush at a New Delhi railway station in February, the Indian Railways updated its manuals for around 60 stations with high footfall by introducing holding areas, better dispersal zones and crowd monitoring, among others. These measures are mostly advisory, however, and not statutory.

What measures have States introduced?

Following a deadly stampede outside M. Chinnaswamy Stadium in Bengaluru in June 2025, the Karnataka government tabled the Crowd Control (Managing Crowd at Events and Venues of Mass Gathering) Bill, 2025. This instrument covers political rallies, conferences, cultural programmes, and other events, and fixes responsibility on organisers. It also empowers district magistrates to cancel or redirect events, regulate the use of loudspeakers, and impose fines and imprisonment for violations.

The Uttar Pradesh State Disaster Management Authority issued the Guidelines for Managing Crowd at Events of Mass Gathering, 2023 — a document that formalises measures for religious and cultural events. The Gujarat Institute of Disaster Management prepared training materials that include technical instructions on calculating site capacity, planning exits, training volunteers, and ensuring first aid and fire safety. After a stampede at the Mansa Devi temple in Haridwar in July, the Uttarakhand government ordered safety arrangements at major temples to be updated and directed authorities to remove encroachments around shrines.



The Maharashtra government introduced a Bill in 2025 empowering the Nasik-Trimbakeshwar Kumbh Mela Authority to authorise temporary townships and bypass certain urban planning norms so that facilities can be created for large gatherings.

Local enforcement agencies have supplemented these steps with operating protocols. After the Bengaluru incident, for instance, the Karnataka police circulated a new Standard Operating Procedure to control crowds at public functions and detailed responsibilities for coordination between departments, medical preparedness, and fire safety.

In many districts across States, the police have also directed organisers of large religious or political gatherings to prepare crowd management plans, limit crowd size, deploy medical teams, set up temporary barricades, and divert routes. These orders are still only administrative and aren't backed by a law. Most State-level initiatives have also been introduced after specific accidents: the Uttarakhand directives followed the Haridwar stampede; Tamil Nadu's announcement after the Karur rally deaths; Karnataka's Bill after the stadium incident; and Maharashtra's Bill after incidents related to the Prayagraj Kumbh Mela.

What is scientific crowd control?

According to prevailing scientific wisdom, safely navigating a crowd depends on controlling its density and sidestepping hazardous flow patterns. Modelling studies have shown that the risk of a deadly crush escalates when crowd density approaches 5 persons per sq. m. Since cameras on drones linked to computers on the ground can continuously monitor crowd density, not using such technologies to manage crowds is seen as a shortcoming.

Second, crowds should never be channelled into bottlenecks, slopes or counter-flows because they magnify pressure and destabilise movement. In a moving crowd, individuals are advised to move diagonally, towards the less dense edges, and to avoid resisting the flow. Because compressive asphyxia rather than trampling is the main cause of fatalities, individuals should keep their forearms across the chest to protect their breathing space and maintain balance with staggered footing. If one is knocked down, rolling to the side and shielding the head and neck while attempting to rise quickly is recommended.

Finally, people should avoid rigid barriers such as fences, walls or stages where pressures against the body can rise dangerously. Stopping to retrieve dropped items or to film in dense flows must be avoided since even brief obstructions can create waves of turbulence.

FIRE AT JAIPUR'S SAWAI MANSINGH HOSPITAL: FROM JAIPUR TO JHANSI, SAME DISASTER, SAME LACK OF ACCOUNTABILITY

The fragility of India's public-hospital safety architecture was cast into sharp relief once again Sunday night when a fire broke out in the neurosurgery ICU of Jaipur's Sawai Mansingh (SMS) Hospital, one of the largest government hospitals in Rajasthan. The blaze, reportedly triggered by a short circuit in an adjacent storage room, claimed the lives of at least six critically ill patients. Eyewitnesses and bereaved families speak of horrifying scenes of chaos: Malfunctioning alarms, absent fire extinguishers, locked emergency exits, overburdened staff ignoring early warning signs before abandoning patients and their desperate attendants in the pandemonium that followed. In an institution meant to offer care, this failure of basic infrastructure, preparedness and accountability reinforces a deeper chasm — one of chronic neglect and institutional inertia.



That the SMS Hospital tragedy is not an outlier in India's recent history of hospital fires is evident from the fact that around the same time as the disaster in Jaipur, in Ahmedabad, in two separate incidents, fire broke out at a children's hospital on Sunday and at another municipal-run hospital on Monday. An investigation by this newspaper into major fires across 11 hospitals in the last five years, following the death of 18 newborn babies in a hospital fire in Jhansi in November 2024, had revealed an alarming pattern: Short circuits caused by inadequate maintenance and improper storage of highly inflammable and hazardous equipment, lack of firefighting equipment and training in evacuation protocols, and negligence of government agencies to conduct audits and enforce compliance. Municipal fire inspections are perfunctory; certifications are rubber-stamped; NDMA and building-code guidelines lurch from paper to oblivion. In the aftermath of Sunday's incident, investigations have revealed that the SMS Hospital has been the site of several incidents of fire, including as recently as June.

The Rajasthan government has instituted a six-member committee to investigate the circumstances of the fire. The reaction joins a long catalogue of such responses that are not backed by consequences. In nearly all of the major fire incidents in the last five years, most of the accused — hospital owners, administrators and service providers — have been granted bail, slipping back into professional life as though no disaster had ever intervened. It signals impunity, and a devastating indifference to human life, especially that of the poor, who depend mostly on public hospitals. Until accountability becomes systemic and consistent, the next disaster is not a question of "if" but "when".

STOP THE BLASTS

The blast in a firecracker unit at V. Savaram village in Konaseema district in Andhra Pradesh that claimed eight lives is the latest in a series of accidents that have punctuated the weeks leading up to Deepavali, year after year. The unit was among the 18 firecracker manufacturing units in the district that had had a safety audit about a month ago. The units had been issued licences by the District Collector. Such incidents have been reported in the district in earlier years too. A three-day ban on firecracker manufacturing has been imposed and a fresh safety audit has been ordered. It would appear that no anomalies were found in the audit and no red flags were raised. Besides the 18 firecracker manufacturing units, there are 18 other units in the district that procure and sell crackers wholesale during the season. While firecracker manufacture is not a major activity in the district, there are some seasonal units. There were 10 people in the unit that used chemicals to manufacture the crackers when an electrical fire led to an explosion and the collapse of a wall. That the authorities found it difficult to identify the dead would point to poor record keeping. Further, Konaseema is in the Godavari basin which has extensive oil and gas drilling and transport operations including pipelines. Fire accidents can be devastating if they spread to these facilities.

Firecracker manufacturing is not a major economic activity across India barring Tamil Nadu. The awareness levels and scrutiny are, therefore, not always high, and Konaseema would seem to be one such case. The nodal agency that licenses these units is the Petroleum & Explosives Safety Organization (PESO) which has various levels of licensing with elaborate safety protocols. Fire needs fuel, air and a source of ignition. Cracker manufacturing units have many combustible materials, which are the fuel, which is why sources of fire must be completely absent. It is for this reason too that electric equipment and switchboards must meet high fire safety standards and should intrinsically protect against the starting of fires. Even if an electric fire were to start, it should not spread to areas where explosive chemicals are used. An added layer of safety typical in PESO protocols is that the electric equipment can only be operated when no human would be



present. But it would seem that such elaborate protocols were either absent or poorly implemented at Konaseema. The accident shows that there is a case for all such units across the country to scrupulously apply the high-level safety protocols of PESO.

ARE WORKERS' RIGHTS BEING ERODED?

The story so far:

On June 30, at the Sigachi Industries chemical factory in Telangana, 40 workers were killed when a chemical reactor burst. Countless others were injured. Barely a day later, on July 1, eight workers were killed in an explosion at Gokulesh Fireworks in Sivakasi, Tamil Nadu. And yet again on September 30, nine workers died when a 10-metre-high coal-handling plant collapsed at Chennai's Ennore Thermal Power Station. The British Safety Council estimates that one in four fatal workplace accidents worldwide occur in India. This is a conservative figure, given the widespread underreporting of workplace injuries and deaths, especially among contract and informal workers whose employment is neither registered nor protected by law.

Why do workplace accidents occur?

Accidents occur not because they are inevitable but because employers fail to prevent them. Prevention means eliminating hazards through proper workplace design, equipment maintenance, safety systems, and by enforcing protective procedures and training all workers and supervisors exposed to risk.

The Telangana explosion is a case in point. The reactor was operating at twice the permissible temperature. No alarms went off, and no safety officer intervened. The machinery was outdated, maintenance was ignored, and repeated worker complaints were dismissed. When the blast occurred, workers jumped factory walls to save themselves. The required on-site ambulance was missing, and the injured were taken to the hospital in a damaged company bus. Even after a week, authorities could not determine how many were "missing" which is clear evidence that unregistered workers were working in a highly hazardous plant with no entry or exit records. The Ennore collapse also followed the same pattern. The coal-handling structure fell likely due to faulty design, poor-quality scaffolding, or inadequate anchoring.

The International Labour Organization (ILO) has confirmed that industrial accidents are rarely random. They occur because managements cut corners, underinvesting in safety to reduce costs and maximise profit. Even when employers blame "human error," the real causes lie in employer practices: long working hours, inadequate rest, excessive work pressure, or wages so low that workers are forced to take double shifts.

What are the laws in place in India?

Workers have fought for safer workplaces since the dawn of the industrial age. The first Factories Act in India was enacted in 1881. After Independence, the Factories Act, 1948 became the cornerstone of labour regulation. It governed everything from factory licensing and machinery maintenance to working hours, rest breaks, canteens, and crèches based on the principle that decent working conditions and safety go hand in hand. The Act also saw amendments in 1976 and 1987, the latter prompted by the Bhopal Gas Tragedy. These laws were enforced through licensing and inspection, and a combination of scheduled and surprise checks. Though imperfect, this allowed workers, especially unionised ones, to file complaints and compel employers to act. But



the Bhopal tragedy exposed its limits — inspections could be bribed away, records falsified, and violations ignored.

India's mechanisms to compensate injured or deceased workers — the Workmen's Compensation Act, 1923 and Employees' State Insurance Act, 1948 — recognise compensation for loss of earnings, including lifetime income. However, in practice, such compensation remains meagre.

More importantly, these laws do not hold employers criminally accountable. When such accidents draw media attention, governments announce ex gratia payments from public funds. This turns compensation into charity and absolves employers of responsibility.

What is the situation now?

Since the 1990s, labour protections have been systematically dismantled. Employers demand "flexibility" including freedom to hire, fire, and extract work without oversight. Governments have obliged by weakening inspections, diluting laws, and branding safety regulations as "obstacles to business." For example, in 2015, the Maharashtra government allowed employers to "self-certify" compliance with labour laws. And the BJP government's 'Ease of Doing Business' campaign has pushed other States to follow.

The Occupational Safety, Health and Working Conditions (OSHWC) Code, 2020, which seeks to replace the Factories Act, epitomises this shift. Though currently in abeyance, once enforced it will move health and safety from being a statutory right to executive discretion. What was once a worker's right will become government generosity. At the same time, States have increased their working hours, a practice started during the COVID pandemic, which is a major blow to safety. In 2023, Karnataka made this permanent, increasing daily limits and reducing rest periods.

It is well established that safe workplaces enhance productivity and profits. Yet India's dominant business culture is not about sustainable profits but extracting the maximum from labour with minimal responsibility. Until the state restores workplace safety as a right, reinstates inspection as enforcement, and holds employers criminally liable for preventable deaths, workers' lives will always hang in the balance.

LANDSLIDES IN DARJEELING HILLS, 20 DEAD

At least 20 people have been killed and scores are missing after heavy rainfall lashed the Himalayan region of West Bengal on Saturday night, triggering large-scale landslides in the districts of Darjeeling, Kalimpong, and Kurseong. Parts of the Terai region of the state also witnessed flooding as the water level rose in the rivers.

- Darjeeling, known for its beauty and salubrious climate, has been a victim of several natural disasters in the past. Available records show that massive landslides occurred in 1899, 1934, 1950, 1968, 1975, 1980, 1991 and more recently in 2011 and 2015. The year 1968 saw devastating floods, also in October, killing over a thousand people.
- The State of Environment Report, 1991, published by the non-profit Centre for Science and Environment, stated that during 1902-1978, there were nine cloud burst occurrences in the Teesta Valley.



- Firstly, the population in the hills has increased, mainly because of influx from the plains and neighbouring countries. The land-and-property-buying spree recorded metamorphic changes in the last three decades.
- Secondly, the impact of climate change has been quite distinctly visible in the changing rainfall pattern. The rainfall that remained fairly spread over from May and September has now become more intense and incessant, lasting for just a few hours over a few days.
- Thirdly, the rivers and jhoras (streams) have shown unprecedented course changes, thereby generating new paths for hydrological flows and intrusions into human habitations and livelihoods.
- Fourthly, heavy, unsuitable and unsustainable development projects, like hydro power, railways, hotels and other installations, have been a massive onslaught on the limited carrying capacity of these hills.
- And finally, the flooding of river beds, streams- jhora sidelines and other natural corridors with unplanned and unauthorised settlements have triggered arterial clogging.
- In the Landslide Atlas of India 2023 published by Indian Space Research Organisation (ISRO), Darjeeling was ranked 35th as the most exposed area among 147 districts.
- The Glacial Lake Outburst Flood (GLOF) in Sikkim in October 2023, triggered by the Lhonak lake breach, was very emphatically warned about in the Sikkim Human Development Report 2001.
- However, seriously lacking is the required urgency in Central and state governments in both forewarning the hill communities and also in managing the aftermath of damages.
- Besides the relatively weaker institution of the District Collector, there is no professional agency to handle such devastation.

Do You Know:

- A landslide is a physical phenomenon in which a mass portion of rock, debris, or soil falls due to the influence of gravity. Landslides are one of the common geological hazards in hilly areas throughout the world.
- The Indian Space Research Organisation (ISRO) released the “Landslide Atlas of India” in 2023. Landslides mapped in the ISRO atlas are mainly event-based and season-based.
- Excluding snow covered areas, approximately 12.6 per cent of the country’s geographical land area (0.42 million sq km) is prone to landslides. As many as 66.5 per cent of the landslides are reported from the North-western Himalayas, about 18.8 per cent from the North-eastern Himalayas, and about 14.7 per cent from the Western Ghats.
- GLOFs are disaster events caused by the abrupt discharge of water from glacial lakes — large bodies of water that sit in front of, on top of, or beneath a melting glacier. As a glacier withdraws, it leaves behind a depression that gets filled with meltwater, thereby forming a lake.



STATE OF THE SOIL AFTER PUNJAB DELUGE: REASONS FOR CAUTIOUS OPTIMISM

Punjab experienced one of its worst floods in recent memory this year. All 23 districts were flood-affected, and two lakh hectares of cultivable farmland experienced flooding and waterlogging.

- Questions raised about soil fertility ahead of wheat-sowing season and the impact on agricultural productivity.
- Flood impacts: erosion of topsoil (containing phosphorus, nitrogen, carbon) and deposition of silt, especially near riverbanks.
- Silt can be beneficial (alluvial silt), but heavy deposits or prolonged waterlogging may cause compaction and harm productivity.
- Soil sampling by Punjab Agricultural University in flood-hit districts: manageable situation, some nutrient leaching, and pH imbalance.
- Restoration: deep ploughing, targeted fertilisation, organic amendments, and individual soil tests before rabi cycle.
- Strategy depends on silt depth and soil type: normal ploughing for shallow silt, deep chiselling for deeper silt.
- Use of compost/organic matter advised to restore soil texture; prompt intervention will help meet rabi crop cycles.
- Punjab government policy: farmers can sell sand/silt deposited on their land ('Jisda Khet Usdi Ret').
- Most farmers can resume crop cycles if silt deposits aren't too heavy; prompt action needed if deposits are heavier.

Do You Know:

- Soil Classification groups soils with similar properties for geo-referencing and mapping; soils are more complex than air/water.
- Indian soils have low organic carbon (SOC); optimal SOC per World Food Laureate Rattan Lal should be 1.5–2%, but 60% of Indian soils have less than 0.5%.
- Protecting soil health critical for sustainable agriculture and food security.

THE CASE TO RETHINK INDIA'S INFLUENZA VACCINATION STRATEGY

For most of us, influenza, or "the flu", is dismissed as a seasonal nuisance that causes fever, cough, and body aches for a week or so before disappearing. Influenza is far from harmless, however. Worldwide, it's a major cause of respiratory illness, hospitalisation, and deaths, especially among children, older adults, and people with underlying medical conditions.

In India, the burden of influenza is substantial but often underestimated. While the government tracks seasonal influenza through its national surveillance system, official focus remains largely on the H1N1 strain, a.k.a. "swine flu". Yet recently, the winter months of 2024-2025 saw an



unexpectedly severe outbreak of influenza B, a strain that usually causes milder illness in children. And as the post-monsoon season unfolded, the H3N2 strain drove a fresh surge.

Two vaccines' quirks

Recent surveillance data show India's influenza outbreaks have two distinct peaks: during the winter months (January-March) and in the post-monsoon period (July-September). This pattern, together with the short-lived protection provided by existing influenza vaccines, forces us to consider whether our current approach to flu vaccination is sufficiently protective. The influenza virus constantly undergoes genetic changes known as antigenic drift. They allow it to escape the body's immune defenses as well as force vaccines to be updated regularly. Unlike measles or polio vaccines, which provide long-lasting immunity, flu vaccines only offer moderate protection and are reformulated every year. Around the world, multiple strains of flu, such as H1N1, H3N2, and influenza B, circulate simultaneously, and matching vaccine strains with circulating viruses is quite challenging.

The two main types of vaccines available in India are inactivated influenza vaccines, administered by injection, and live attenuated vaccines, given as a nasal spray. Both types can reduce the risk of influenza but their effectiveness varies greatly depending on the strain and the vaccinee's age. The protection is typically strongest against H1N1, moderate against influenza B, and weakest against H3N2.

A major concern with these vaccines is their limited duration of protection. Antibody levels increase after vaccination, peak within a few weeks, and gradually decline. Several studies have shown that vaccine effectiveness drops significantly within three to six months, with some evidence suggesting protection may almost completely fade within only 90 days. For countries with a single influenza season, this decline is less of an issue because one well-timed annual dose can adequately protect people during the peak period. In India, however, where the virus strikes twice a year, the short-lived immunity leaves large segments of the population vulnerable during the second peak.

Thus, an annual influenza vaccine doesn't fit India's reality. A shot before the monsoon may protect against outbreaks in July-September, but by the time the winter wave arrives in January, much of that immunity has waned. Similarly, a shot before winter might shield people until March but won't hold up through the next monsoon season. So whichever dose is chosen, half of the year's influenza burden remains unaddressed.

Less than 5%

The logical alternative is to introduce a biannual influenza vaccination schedule for India. Under this system, people would receive one dose in May or June, just before the onset of the monsoon, and another dose in November or December, ahead of the winter wave. This approach could ensure more consistent protection across both peaks, dramatically reducing the number of influenza cases, hospitalisations, and deaths.

While the idea of two flu shots a year may seem demanding, the health benefits could be significant, particularly for children, who account for the largest share of influenza-related hospitalisations and deaths in India.

Despite flu vaccines having been available for over a decade now, less than 5% of Indians receive them. This lack of acceptance stems partly from a perception that influenza is a minor illness,



partly from limited public awareness, and partly from an absence of government policy support. Currently, influenza vaccines aren't part of the Universal Immunisation Program (UIP). They are instead left to the private market and are often seen as optional. For a disease that causes lakhs of severe cases every year, this indifference is surprising and costly.

Biannual vaccination, if backed by government policy, could be a turning point. By including it in the UIP, India could leverage its strong domestic vaccine production capacity to make vaccines more affordable and accessible. Coupled with public awareness campaigns, such a move could raise coverage and normalise influenza vaccination in the public mind.

ENSURE COMPLIANCE

Atmanirbhar Bharat is an aspirational ideal well worth pursuing, but not without a sustained quality control framework in place. Time and again, there have been serious threats to the goal of 'making in India', particularly in the pharmaceutical sector. The issue of quality of cough syrups has repeatedly been raised, and India with great ambitions in the global pharmaceutical sector has often been short of what is required to build a robust and trustworthy industry. Recently, the Union Health Ministry sought strict drug compliance from all Indian drug manufacturers, in line with the revised Schedule M norms for pharmaceutical products in India. This came after a report from the Tamil Nadu Drugs Control Department found above permissible limits of diethylene glycol (DEG) in samples of Coldrif, a cough syrup being manufactured by a private company. The tests were initiated after cough syrup was suspected to be behind the recent deaths of at least 14 children in Rajasthan and Madhya Pradesh. Strangely, while the Health Ministry ruled out the presence of DEG, in initial tests conducted on samples from the two States, it was detected in one of the batches lifted by Tamil Nadu within the State. The State's Drugs Control Department also recorded several non-compliance factors in the Good Manufacturing Practices and Good Laboratory Practices of the Drugs Rules, at the manufacturing facility. Its report mentioned that the contaminated batch was manufactured using non-pharmacopoeial grade propylene glycol as an excipient. It mentioned that this might have contaminated the drug with DEG and ethylene glycol, known nephrotoxic substances. The Central Drugs Standard Control Organisation has recommended cancellation of the firm's manufacturing licence. Meanwhile, a doctor who reportedly recommended the cough syrup to many of the children who died in Madhya Pradesh was arrested.

While these measures are good to address the situation in the instant case, what the Indian state must do is have a zero threshold for poor quality drugs. Hawk-like monitoring is necessary, and action when violations are detected. It is criminal to act only when deaths have occurred; that is indefensible. A framework of proven Good Laboratory Practices already exists; what is needed is seriousness in handling every such reported violation, along with regular, surprise inspections of drug batches, with appropriate action taken for every violation. It is important to send the message down the assembly line that the government will not brook any shoddiness or violations that endanger the lives of people.

NEEDS MORE THAN THE REGULATOR

Often called the "pharmacy of the world," India's pharmaceutical industry faces a growing crisis that threatens both public health and national credibility — the unchecked proliferation of counterfeit and substandard drugs.



- The tragic deaths of children in multiple states due to adulterated cough syrups are not isolated accidents but symptoms of a systemic failure. India's investigative and prosecutorial machinery remains ill-equipped to combat the complex, organised networks behind counterfeit medicines.
- The conviction rate for counterfeit drug cases in India is a mere 5.9 per cent, and after procedural adjustments, the effective conviction rate rarely exceeds 3 per cent.
- This statistic exposes the inadequacy of investigative processes under the Drugs and Cosmetics Act, 1940 (D&C Act), a law ill-suited for modern transnational crimes.
- A significant procedural impediment stems from the Supreme Court's Ashok Kumar (2020) verdict, which limited the registration of offences under the D&C Act exclusively to Drug Control Officers.
- While this decision aimed to prevent misuse of police powers, it inadvertently paralysed law-enforcement capability. Excluding the police from directly registering cases under the Act created an enforcement vacuum exploited by counterfeiters.
- Drug Control Officers are knowledgeable about regulatory compliance, but they lack the field intelligence and forensic tools needed to unearth large-scale counterfeit networks. Consequently, most investigations remain confined to seizures without uncovering the criminal ecosystems.
- A careful legal reading, however, reveals that the police are not entirely powerless. The Bharatiya Nyaya Sanhita (BNS), 2023, provides avenues for initiating police investigations under general criminal provisions such as Section 318 (Cheating) and Sections 336–338 (Forgery and Falsification of Records).
- To achieve tangible deterrence, India must embrace a “Best of Both Worlds” model — one that fuses the technical precision of the Drug Control Department with the investigative acumen of the police and forensic agencies.
- The solution lies not in replacing one system with another but in integrating regulatory specialisation with criminal investigation.

Do You Know:

- The World Health Organisation (WHO) Thursday sought answers from the Indian authorities on whether the cough syrup linked to child deaths in the country was exported to other nations.
- WHO said that the global health agency will decide on issuing a ‘Global Medical Products Alert’ for the cough syrup Coldrif once it receives official confirmation from authorities in India. Such alerts are issued for medicines found to be substandard or contaminated.
- Till now, 22 children have died due to kidney infections caused by the consumption of the “contaminated” cough syrup, containing Diethylene Glycol (DEG) and Ethylene Glycol (EG).
- The Central government, in an order dated December 18, 2023, had said that the fixed-dose combination (FDC) of chlorpheniramine maleate IP 2mg and phenylephrine HCl IP 5mg drop/ml “should not be used in children below four years of age.”



- Prescribed to treat symptoms of cold and cough, including runny nose, sneezing and sore throat and watery eyes, Coldrif contains chlorpheniramine maleate, paracetamol and phenylephrine.
- The Central Drugs Standard Control Organisation issued a directive on Wednesday to all State and Union Territory Drug Controllers, calling for strict enforcement of the Drugs Rules, 1945, with specific emphasis on the mandatory testing of raw materials and finished pharmaceutical products before release in the market.

OVERINDULGENCE IN CARBOHYDRATES AND LOW PROTEIN INTAKE ARE CONTRIBUTING TO INDIA'S OBESITY CRISIS

India's obesity problem and its connection to the surge in non-communicable diseases like diabetes and hypertension has been evident for some time now. The findings of a recent survey offer a clearer picture of what may be one of the biggest factors driving this ballooning crisis. Conducted as part of a study by the Indian Council of Medical Research-India Diabetes (ICMR-INDIAB), in collaboration with the Madras Diabetes Research Foundation, the survey has found the typical diet across the country to be highly skewed in favour of carbohydrates, which contribute a whopping 62 per cent of daily calories for most Indians. Along with this overconsumption of refined carbohydrates — chiefly in the form of white rice, milled whole grains and added sugar — the survey, conducted with a sample of 1,21,077 Indian adults from urban and rural areas of 36 states, Union Territories and NCT-Delhi, has also found sub-optimal protein consumption. It is a crisis, in other words, that begins at the basic level of how people are putting together their meals.

In a country that has historically struggled with malnutrition, the growing number of people who appear to be simultaneously overfed and under-nourished should set alarm bells ringing at every level. It is further proof that rising prosperity does not automatically translate to a healthier diet. Indeed, what these findings make clear is that beyond tackling the recognised risks posed by overconsumption of salt-, fat- and sugar-laden ultra-processed, packaged snacks and drinks — increasingly evident across rural and urban parts of the country — there is an urgent need to address lack of awareness about the macronutrient composition of the average Indian's diet. Some steps have already been taken to address the overindulgence in junk food, notably in light of the alarming rise in childhood obesity rates — more than 12 million children were grossly overweight in 2022, compared to 0.4 million in 1990, as per a Lancet study last year. One such initiative is the CBSE's directive earlier this year to set up sugar boards in affiliated schools to reinforce the dangers of excessive sugar consumption.

But such steps are not nearly enough. Neither are government initiatives to encourage greater consumption of millets, which have been promoted as a more nutritionally-dense replacement for refined grains, as they do not take into account the fundamental problems of overindulgence in carbs and protein deficiency. This is also why policies that place political imperatives above public health concerns, such as the exclusion of eggs in midday meal schemes in various states, need a rethink. In a country where large portions of rice, roti and other grain-based foods form the centre of a meal, representing both security and satiation, what is needed is a strategy that places nutrition science at its centre, involving both children and adults. Overhauling the way people eat — how they have long eaten — is not going to be easy. But it must be done.



CBFC WANTS REMOVAL OF BEEF BIRIYANI EATING AND SEVERAL OTHER SCENES FROM MALAYALAM MOVIE HAAL

The Central Board of Film Certification (CBFC) has demanded the makers of the Malayalam film Haal to remove several scenes from the films, including the one in which the characters are consuming beef biryani, for the film to be certified for exhibition.

Similar to the case of the film JSK - Janaki Vs State of Kerala, the movie Haal, starring Shane Nigam and Sakshi Vaidya, was initially cleared by the regional censor office but was held up by the officials at the CBFC headquarters in Mumbai.

Filmmaker Veera told The Hindu that the producers had submitted the film for certification to the regional office here in the first week of September, with a plan to release it on September 10. Though the regional office conveyed that the film was as good as cleared, the makers were later told that the film had been sent to a revising committee.

Some of the scenes that were asked to be removed included the one in which a character uses a purdah to hide her identity, another in which a few characters wearing a rakhi usually used by Sangh Parivar activists on their wrists, a scene where a character says Dhawaja Pranamam (a greeting associated with the RSS), and a reference to 'Ganapathi Vattam' (the BJP had demanded that Sulthan Bathery's name be changed to Ganapathi Vattam).

"The CBFC officials made such strange demands, and even told us that they will give only 'A' certificate for the movie even if we make these changes. They are claiming that the film has a hidden agenda. The film stands for the idea of inter-religious marriage, in which the individuals will continue to follow their respective religion without converting," says Veera.

The makers of the film, with a budget of around ₹16 crore, have already postponed the release date twice, first to September 19 and later to October 10.

Moves HC

However, with the CBFC officials delaying the process, they approached the Kerala High Court, which on Thursday directed the Union government's counsel to make clear its stand during the next hearing on October 14.

INDIA'S INVASIVE SPECIES PRESENT A DILEMMA: DOCUMENT OR CONSERVE

Conservation scientists are sounding warning bells over "stealth invader" species that they say are destroying local biodiversity and changing landscapes.

This has in turn posed a chicken-and-egg dilemma for researchers: should they wait to document the effects of all invasive alien species in India and then prepare a conservation plan or should they conduct the exercises in parallel?

Invasive alien species are non-native species that have been introduced into a landscape by accident; as exotic ornamental fishes and decorated shrubs; or as a solution to a problem such as revegetating arid land. Soon these species take over a region and displace much of the local biodiversity, even rendering some native species locally or globally extinct and destroying habitats.



Invasive alien species have received more research and policy attention of late due to the economic and non-economic losses they cause. At present, some 37,000 established alien species have been introduced by human activities worldwide and every year there are 200 more, K.V. Sankaran, former director of Kerala Forest Research Institute, Thrissur, said. Of these, around 3,500 alien species (or 10%) have been found to have negative consequences for nature and people, Dr. Sankaran had told a forum of invasive alien species biologists in Bhopal in February.

India has an estimated 139 invasive alien species, mostly insect pests of crops, according to Ankila Hiremath at the Ashoka Trust for Research in Ecology and the Environment, Bengaluru. Others indirectly damage crops due to their effects on native insects. For example the invasive yellow crazy ant (*Anoplolepis gracilipes*) reduces the numbers of other ants that help keep pests in check.

Soil and water

Dr. Hiremath cited the example of the fast-growing weed *Lantana camara*. Introduced as a colourful shrub in the British colonial period, today it's in the way of efforts to conserve elephants and other large herbivores. The plant thrives in a range of soils from alkaline to acidic, and fertile to infertile, and is unpalatable for large herbivores and makes their habitat harder to navigate. The animals adapt by switching to cash crops, pushing them closer to human settlements, and increasing human-animal conflict.

Invasive plants also degrade natural wild habitats, endangering predator-prey relationships and jeopardising conservation efforts, Achyut Banerjee, assistant professor at the Azim Premji University in Bhopal, said.

Similarly, *Prosopis juliflora* is a tree originally introduced to India from South America and the Caribbean in the 19th century. In the 1960s and 1970s, the Gujarat Forest Department brought it to the Banni grassland in the Kutch region to combat soil salinisation and boost green cover. Now known locally as 'gando bawar', or the mad tree, this invasive species covers 50-60% of the original grassland area. *Prosopis* is very thirsty and guzzles water from surface soil, thus competing with grasses and native trees such as *Acacia*, Dr. Hiremath said.

This has led to more salt-water intrusion from the nearby coast rather than less — and has stressed the local wildlife, frustrated access to grazing resources, and has broken down traditional pastoralist-farmer networks.

Aquatic ecosystems are at risk as well. Dominant aquatic weed species include the water hyacinth (*Pontederia crassipes*), alligator weed (*Alternanthera philoxeroides*), duck weed (*Lemnoideaceae* species), and water lettuce (*Pistia stratiotes*). Water hyacinth is listed among the 10 worst invasives and looms everywhere, from paddy fields to lakes that host migratory birds in winter as well as in the Kaziranga National Park in Assam.

"Alien species are a major threat for 1,070 species of threatened freshwater fishes," Rajeev Raghavan, scientist at the Kerala University of Fisheries and Ocean Studies, Kochi, said.

India alone has 626 alien aquatic species, mostly introduced via the aquarium trade, aquaculture, and for mosquito control and sport fishing, according to Raghavan. Alien fish are now found across India, from the Dal Lake in Kashmir and the rivers and lakes of Manipur lakes to water bodies in Telangana and Kerala.



Poor documentation

A major problem scientists grapple with is the absence of extensive documentation. Unlike a few invasives, such as Parthenium, Lantana, and Prosopis, most of them in India have no recorded invasion histories, invaded regions or extent of consequences, said Alok Bang, assistant professor at Azim Premji University.

Freshwater invasion biology as a discipline is also “still in its infancy”, according to Raghavan. There is a lack of comprehensive studies to understand micro-level distribution of alien species, their potential interactions with native species, and their impacts at the species and ecosystem levels.

“Conservation of a species might be understood differently by different stakeholders, so scientifically, we must define what we mean by conservation and impacts,” and understand their multiple impacts, Dr. Bang said.

For example, at the species level, they affect native inhabitants’ ability to survive and reproduce. At the population level, they affect the population size and genetic diversity. Species could become locally extinct and/or have reduced ranges or communities with multiple species could undergo changes in their composition and functions.

Invasive plants can also change the soil’s porosity and compactness; the acidity and turbidity of water; and the availability of light (e.g. by preventing light from penetrating to the forest floor or sea floor).

At the ecosystem-level, processes like food webs, primary productivity, nutrient cycling, and energy transfers could change — or an entire existing ecosystem could transform into a new one.

Document or conserve?

Conservation researchers, practitioners, and policymakers in India thus face a dilemma. As Dr. Bang put it, should they wait to document the effects of all these species to prepare a conservation plan, or should they document and conserve in parallel?

Waiting to document all “would be unwise because there is no end to doing site-specific documentation, and we may not have the resources to do these studies.”

It would be wiser to simultaneously conduct more impact studies in India and prepare conservation plans based on the knowledge of their ecological and socio-economic consequences in other countries, Dr. Bang added.

He recommended developing standardised quantitative methods to map the cumulative effects of invasive alien species on ecosystems as well as studies on impact assessment and eradication efforts.

“This approach can help identify highly impactful invasive alien species and hotspots of highly [affected] areas and prioritise sites, pathways, and species for management actions,” Dr. Bang, who is working on such a framework, added.

According to him, scientists must also step out of silos and communicate and consult with diverse stakeholders that are interested in and affected by biological invasions while designing potential future prevention, control, and eradication.



He also said citizen science efforts could help create atlases of invasive species distribution.

SRI LANKA IS A NATURAL BARRIER PROTECTING SOUTH-EASTERN COAST FROM OCEAN FURY: STUDY

Sri Lanka, located to the south of India, acts as a natural land barrier and plays a crucial role in shielding the southeastern coast of the country from the potentially destructive impacts of long-period swell waves generated in the Southern Ocean, according to scientists at the Indian National Centre for Ocean Information Services (INCOIS).

These powerful waves, capable of travelling thousands of kilometers with minimal energy loss, have frequently caused coastal flooding and erosion along the southwestern coastline, particularly in Kerala. However, the eastern coast, especially regions north of Sri Lanka such as Tamil Nadu and southern Andhra Pradesh, remains largely unaffected.

This is despite the fact that these swells also propagate into the Bay of Bengal, though they are not predominant along the southeastern coast of India.

Swell shield

To investigate this phenomenon, researchers used real-time data from wave rider buoys deployed off Kollam on the west coast and Pondicherry on the east coast, along with high-resolution simulations using the 'WAVEWATCH III' model.

The results revealed that more than 96% of long-period swell events observed at Kollam failed to reach Pondicherry. But, when the Sri Lankan Land Mass (SLLM) was hypothetically removed from the model, the swells reached and impacted the eastern coast, confirming its vital role as a swell shield.

Significant implications

This study has significant implications in the context of global sea level rise and climate change. Even minor alterations in coastal geography, such as land submergence due to rising seas, could shift wave propagation paths and expose new regions to marine hazards, the scientists said.

"Our analysis shows that in the absence of the SLLM, destructive Southern Ocean swells can reach the Indian southeast coast, including areas north of Sri Lanka up to mid-Andhra Pradesh," said INCOIS director T. M. Balakrishnan Nair.

Mr. Nair emphasised that the findings show the importance of incorporating natural geographic features like islands and landmasses into coastal hazard assessments and early warning systems.

GOVT PLANS MISSION TO REVERSE FALLING CAMEL COUNT

The Ministry of Fisheries, Animal Husbandry and Dairying is planning to launch the National Camel Sustainability Initiative (NCSI) — a national mission aimed at reversing the steady decline in India's camel population.

- The proposal has been outlined in a draft policy paper prepared in consultation with the Food and Agriculture Organization (FAO), which was circulated on September 29 for public comments.



- “To reverse the rapid decline of India’s camel population and restore its economic and ecological significance, a multi-dimensional strategy is essential,” the draft notes.
- The NCSI, as envisioned, would bring together the Department of Animal Husbandry and Dairying, the Ministries of Environment, Rural Development and Tourism, and State governments, to ensure coordinated action.
- The paper highlights that India is witnessing a rapid and alarming decline in its camel population, especially in the traditionally camel-rearing states of Rajasthan and Gujarat.
- According to the 20th Livestock Census, India’s camel population stood at 2.52 lakh in 2019, down from about 11 lakh in 1977 and 4 lakh in 2013. Nearly 90% of these camels are concentrated in Rajasthan and Gujarat.
- “Camels do not receive focused attention under India’s mainstream livestock development programmes, which typically prioritise cattle, buffaloes, poultry, and small ruminants,” the paper notes.
- Although the National Livestock Mission (NLM) includes camels among its supported species, its implementation has remained limited to scattered breeding and small-scale entrepreneurship efforts.
- It proposes a review of the Rajasthan Camel Act to “balance conservation with livelihood rights,” and calls for safe, traceable inter-state trade mechanisms, supported by better transport infrastructure and e-market platforms.
- Additionally, it suggests a national camel awareness and education campaign, urging that camel-related themes be integrated into school textbooks, public campaigns, and rural fairs, and that World Camel Day (June 22) be celebrated nationwide to promote camel culture, conservation, and innovation.

Do You Know:

- The Department of Animal Husbandry and Dairying, Government of India, is implementing the National Livestock Mission (NLM) since 2021. The scheme is being implemented across the country.
- Under the entrepreneurship component of the scheme, NLM-Entrepreneurship Development Programme (NLM-EDP), a 50% capital subsidy, up to ₹50 lakh, is provided for the establishment of poultry, sheep, goat, pig, horse, camel, and donkey breeding farms, as well as feed and fodder units.
- The objective of the National Livestock Mission (NLM) scheme is to increase the per animal productivity, genetic improvement and availability of quality feed and fodder.

About Kharai camels

According to ICAR, the Kharai camel, indigenous to Gujarat, derives its name from the local term “Khara,” meaning saline, reflecting its adaptability to both desert and coastal ecosystems.

It is known as the “Swimming Camel,” as it can traverse long distances across water. It has been preserved by the Rabari and Fakirani Jat tribes for over 400 years.



INDIA TO ASSESS EXTINCTION RISK OF 11,000 WILDLIFE AND PLANT SPECIES, PREPARE 'RED LIST'

THE CENTRE will for the first time assess the extinction risk of approximately 11,000 species, including 7,000 kinds of flora and 4,000 types of fauna — across the country to prepare a 'national red list', as part of its global commitment towards biodiversity protection.

- Union Minister of State for Environment, Forest and Climate Change Kirti Vardhan Singh unveiled the roadmap for the national-level five-year (2025-2030) assessment on Thursday, the first day of the World Congress of International Union for Conservation of Nature (IUCN) at Abu Dhabi.
- According to the assessment plan, the aim is to establish a nationally coordinated, participatory and upgradable 'Red Listing' system that accurately reflects the conservation status of India's biodiversity.
- The IUCN is a global organization comprising 160 member countries and hundreds of civil society groups which work together towards environment and biodiversity protection. The World Conservation Congress convenes once every four years to set priorities on matters of conservation.
- The IUCN periodically examines the health of species and their extinction risks, and this is known as the IUCN Red List. Based on the assessment of their conservation status, the species are put into extinct, extinct in the wild, critically endangered, endangered, vulnerable, near-threatened, least concern, data deficient, and not evaluated list.
- This assessment helps policymakers and wildlife biologists shape conservation recovery plans for those on the brink of extinction and focus resources on such species.
- India has 55,726 recorded plant species, including algae, fungi, and microbes. Of these 6.33%, comprising 3,501 plant species and 27 fungi species have been assessed for the IUCN Red List (Global).
- There are 1,04,561 documented fauna species, and the IUCN Red List assessment has been done for 7,516 of them, which is 7.2% of the recorded faunal diversity of India. The assessment results are alarming: 1,012 species (13.4%) of the total assessed are in the threatened category, and additionally, 289 species are near threatened.
- In terms of Indian species assessed by IUCN for Red List, 1,582 out of 6,568 species are endemic to the country, with high endemism in amphibians (79%) and reptiles (54.9%). Endemism means that these species are native to the respective country's wild habitats.
- The project to create a 'national red list' to examine the threats to the country's flora and fauna will be spearheaded by the Union Environment Ministry and will include the Botanical Survey of India, Zoological Survey of India and non-profit organisation Wildlife Institute of India.

Do You Know:

- The IUCN World Conservation Congress is taking place in Abu Dhabi, United Arab Emirates, from 9 to 15 October 2025.



- Held every four years, the Congress enables IUCN's more than 1,400 Member organisations to democratically determine the most pressing issues in nature conservation and actions to address them to help guide humanity's relationship with our planet.

TUSKS AND TENSIONS

Kerala's decision to amend the Wildlife (Protection) Act 1972 marks a turning point in the federal discourse on environmental governance. The Wild Life Protection (Kerala Amendment) Bill 2025 seeks to arm the State with powers thus far reserved for the Union government. While the ambition is rooted in a painful lived crisis, the attempt to sidestep Centre-State dissonance exposes tensions between ecological prudence and federal autonomy. The Bill asserts that the State may decide when a Schedule II animal has become 'vermin', and thus liable to lose protections under that Schedule for specific areas and periods. It also vests the Chief Wildlife Warden with the power to order any animal that has severely injured a person to be killed, tranquillised, captured or translocated. There have been violent confrontations with wild boars in the State's dense mosaic of farms, settlements and forests. Assembly resolutions and ministerial trips to New Delhi to have the wild boar declared as 'vermin' under the Central Act have proved fruitless. Read against the ongoing expansion of human settlements into erstwhile buffer zones, the change risks normalising lethal outcomes produced by human advance rather than by animal behaviour. This said, the Centre's power to declare vermin has too often been exercised as a veto without transparent criteria or timely engagement with States that face distinct ecologies and pressures. Kerala's frustration is thus a federal critique.

Shifting the same blunt power to the State does not by itself cure the vice of opacity, however. A jurisprudence that ties need to circumstance must interrogate how the circumstance was produced and whether non-lethal options were credibly exhausted. Section 62 of the Central Act exists to keep indiscriminate culling from eroding conservation baselines. Wildlife lies in the Concurrent List and any State law repugnant to the Central Act requires Presidential assent. If that test can be framed as Centre versus State, it is also about whether Kerala's recourse recreates the national safeguards in devolved form. A defensible settlement would preserve the floors, i.e., no dilution of baseline protections and international commitments; building State-level ceilings in the form of clearer, faster procedures; devolving non-lethal toolkits and accountable, data-driven thresholds; and tuning incentives to reward coexistence. Until then, declaring the wild boar to be 'vermin' or downgrading the bonnet macaque from Schedule I to Schedule II of the Central Act, while buying political time, may risk deepening a cycle in which governance failure begets lethal shortcuts. If the urgency is real, so too is the obligation to ensure that speed does not substitute reason and federal devolution does not become federal abdication.

BANGLADESH DEPLOYS WARSHIPS, PATROL AIRCRAFT TO PROTECT PRIZED HILSA FISH

Bangladesh's defence force said it has deployed warships and patrol aircraft as part of a special surveillance operation to protect a prized fish from illegal fishing during its spawning season.

The herring-like hilsa, Bangladesh's national fish and a much-loved delicacy in West Bengal in neighbouring India, return from the Bay of Bengal to rivers each year to lay eggs.

Bangladeshi authorities said on Saturday they had imposed a three-week ban on fishing from October 4 to 25 to safeguard the spawning areas.



The defence force's Inter-Service Public Relations said in a statement that 17 Navy warships and patrol helicopters had been deployed to enforce the ban and protect the fish. "The warships and state-of-the-art maritime patrol aircraft have been conducting round-the-clock surveillance to prevent the intrusion of domestic and foreign fishermen into the deep sea," it said.

Millions in Bangladesh depend on the fish, which can cost up to 2,200 taka (\$18.40) a kg in Dhaka.

Indian fishing fleets trawl the brackish waters of the Ganges and its vast delta, feeding demand in the megacity of Kolkata and the wider State of West Bengal, which has a population of more than 100 million people. Overfishing to meet such demand can deplete stocks as the hilsa return to spawn.

Environmental experts say fish stocks have also been hit by changes to the ecologically sensitive and low-lying deltas, threatened by rising seas driven by climate change. However, they also fear the ships could disturb the spawning hilsa at a critical time.

Md Abdul Wahab, former head of the Eco Fish project at WorldFish, said the hilsa needed "calm and undisturbed waters for spawning" and suggested the use of drones instead.

The Bangladesh government has allocated 25 kg of rice per fishing family to compensate for the ban. Some said that was not enough.

SHORT NEWS

COULD THE U.S. AND RUSSIA EXTEND THE LAST NUCLEAR WEAPONS TREATY?

U.S. President Donald Trump on Sunday said Russian President Vladimir Putin's offer to voluntarily maintain limits for a year on deployed strategic nuclear weapons "sounds like a good idea".

Having long declined to address arms control in isolation, Putin in September offered to voluntarily maintain for one year the limits on deployed strategic nuclear weapons set out in the New START Treaty, which expires on Feb. 5, 2026.

New START, the last remaining Russian-U.S. arms control treaty, was signed by then-presidents Barack Obama and Dmitry Medvedev in 2010 and came into force in 2011. It was extended for five years in 2021 by Putin and then-U.S. president Joe Biden.

PORT ON THE ARABIAN SEA IN BALOCHISTAN

— Recently, Pakistan has offered a port on the Arabian Sea in Balochistan, close to the Chinese-developed Gwadar port, to the US.

— The port in the small, coastal fishing town of Pasni — about 70 miles from Gwadar and 100 miles from the Pakistan-Iran border — is being pitched as a terminal to ship Pakistan's critical minerals.

"WELCOME TO COUNTRY" SMOKE CEREMONY

— Defence Minister was welcomed to the Australian Parliament with a traditional Aboriginal "Welcome to Country" smoke ceremony.

4TH FLOOR SHATABDI TOWER, SAKCHI, JAMSHEDPUR



— It is a symbolic Aboriginal Australian ritual that acknowledges the traditional custodians of the land and signifies friendship and reconciliation.

— A Welcome to Country is a formal ceremony delivered by an Elder, Traditional Owner or Aboriginal and Torres Strait Islander person who has been given permission from Traditional Owners to welcome visitors to their Country. Traditionally it is a ceremony to not only welcome an outsider to Country but to also grant permission for the visitor to enter their land.

— A Welcome to Country occurs at the beginning of any gathering or event. It can take many forms, including singing, dancing, smoking ceremonies or a speech delivered in traditional language, English or a mixture of both.

KONKAN-25

— The first-ever India-UK Carrier Strike Group maritime exercise named Konkan-25 began on October 5. Carriers are warships that can serve as airbases, too.

— The Indian Navy's carrier strike group, led by the indigenous aircraft carrier INS Vikrant, and the United Kingdom Royal Navy's Carrier Strike Group (CSG), led by HMS Prince of Wales is participating in the exercise.

— The exercise is named after India's strategically crucial Konkan coastal region. It is undertaken every two years to enhance joint maritime and air capabilities between the Indian and UK navies on the high seas.

— While the exercise has been biennial since 2004, this edition marks the first time that a British and Indian Carrier Strike Group are participating together. The exercise is being conducted in two phases: Sea phase and Harbour phase.

— Notably, UK CSG is currently on an eight-month multinational deployment known as Operation Highmast.

DIWALI AS HOLIDAY IN THE US

— California has become the third US state to designate Diwali as an official state holiday.

— The bill titled, 'AB268' to designate Diwali as an official state holiday, had successfully passed both houses of the legislature in California and it was signed by Governor Gavin Newsom.

— The first US state to declare Diwali as a state holiday was Pennsylvania in 2024 and it was followed by Connecticut earlier this year.

— California has now joined the list of states to declare Diwali as a state holiday. In New York City, Diwali has been declared a holiday for public schools.

DAMS IN DAMODAR VALLEY

— The ruling Trinamool Congress (TMC) in West Bengal is targeting the Damodar Valley Corporation (DVC), the Central agency that oversees dams along the Damodar river, for releasing water into the state and creating a "man-made flood".



— DVC is a statutory body set up in 1948 which manages the larger Damodar Valley Project that was the first multipurpose river valley development project in India.

— The corporation oversees several dams and hydroelectric and thermal power plants in the Damodar river region that is spread across West Bengal and Jharkhand.

— The DVC is led by a seven-member board that includes the chairman, four DVC members, and one representative each from the governments of the Centre, West Bengal and Jharkhand.

WORLD BANK CUTS INDIA'S FY27 GDP FORECAST TO 6.3%, SEES REFORM 'URGENCY'

The World Bank Tuesday lowered its GDP growth forecast for India by 20 basis points (bps) to 6.3 per cent for 2026-27 due to risks from the 50 per cent tariff imposed by the US.

At the same time, the multilateral agency raised the forecast for the current fiscal by 20 bps to 6.5 per cent on the back of the higher-than-expected growth rate of 7.8 per cent clocked in the April-June quarter, said Franziska Ohnsorge, World Bank's Chief Economist for the South Asia Region.

In terms of reforms, government has looked to push domestic consumption in 2025. First, in February, the Union Budget for 2025-26 reduced personal income tax rates under the new direct tax regime. Then, in early September, the GST Council reduced Goods and Services Tax (GST) rates with effect from September 22. The GST rate cuts were part of a broader reform of the indirect tax regime.

RAT SYSTEM ON AIR INDIA BOEING 787

— In Air India flight AI-117, flying from Amritsar to Birmingham in the UK, the ram air turbine (RAT)—a last-resort emergency power system—of the Boeing 787-8 aircraft deployed on its own, even as all electrical and hydraulic parameters were found to be normal and the pilots did not spot any abnormality with the plane.

— In modern aircraft, the RAT deploys automatically during grave emergencies involving total electrical failure, a debilitating hydraulic failure, or a dual engine failure, considered to be the rarest of rare scenarios. Pilots may also deploy it manually.

— The RAT, a critical system, is essentially a wind turbine stowed in a compartment on the underside of the Boeing 787's fuselage, just behind the aircraft's wing. It deploys into the airstream to generate power only when primary and secondary power sources fail.

— The RAT generates power from the airstream by injecting ram pressure, which is created by the forward motion of the aircraft, and depends on the plane's speed at the time.

— In the event of total power failure, the RAT helps power vital systems, including flight controls, flight-critical instrumentation, navigation, and communication equipment. The RAT, however, is not a substitute for engine power.

TULIPS IN SPRING, CHRYSANTHEMUMS TO KEEP KASHMIR'S AUTUMN TOURISM IN FULL BLOOM

As the lush greens of summer fade and a hush of grey settles over Kashmir's Valley of colours, a quiet burst of life is taking root at the Sher-e-Kashmir University of Agricultural Sciences and

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Technology (SKUAST). The Valley's first chrysanthemum garden is set to bloom this autumn, infusing fragrance, colour and a renewed sense of hope into the fading landscape — and perhaps, a fresh lease of life into Kashmir's waning tourist season.

Nearly two decades after Srinagar's tulip bloom transformed the Valley's spring tourism — advancing the tourist calendar by almost a month — the chrysanthemum bloom aims to do the same at the other end of the season, extending it well into winter.

Taking a cue from SKUAST's experimental garden, the Jammu and Kashmir government has already begun work on an exclusive chrysanthemum (or Gul-e-Dawood) garden at the Srinagar Botanical Garden, adjacent to the famed Tulip Garden.

DRAVYA PORTAL

- Last month, the Ministry of Ayush unveiled the portal during the 10th Ayurveda Day event.
- The DRAVYA portal serves as a comprehensive, open-access database that dynamically consolidates data from classical Ayurvedic texts and standard online research platforms.
- It enables users to search for medicinal substances used across Ayush systems and access detailed profiles spanning Ayurvedic pharmacotherapeutics, botany, chemistry, pharmacy, pharmacology, and safety information.

SC PAUSES ARAVALLI JUNGLE SAFARI: WHAT IS THE ECO-TOURISM PROJECT AT DELHI'S DOORSTEP, AND WHY ARE CRITICS OPPOSED TO IT?

The Supreme Court on Wednesday directed the Haryana government not to undertake any work on the proposed Aravalli jungle safari, billed as the biggest zoo-safari project of its kind in the world, until the next hearing on October 15.

The project, announced by the Haryana government then led by Chief Minister Manohar Lal Khattar (who is now the Union Minister for Housing and Urban Affairs) in 2022, aims to create the "world's largest safari park" in the Aravallis in the districts of Gurugram and Nuh in the southern corner of the state.

CENTRE PROPOSES PRIOR GREEN CLEARANCE EXEMPTION FOR SOLID WASTE MANAGEMENT, EFFLUENT TREATMENT UNITS

The Union Environment Ministry has proposed to exempt common municipal solid waste management facilities and common effluent treatment plants (CETPs) from obtaining prior environmental clearance.

The ministry issued two separate draft notifications—one on October 3 for CETPs and another on October 6 for solid waste facilities—both proposing exemptions based on recommendations from the sectoral expert appraisal committee (EAC) on infrastructure projects.

The draft notifications have thus proposed to omit entries related to solid waste municipal management facilities and CETPs from the list of activities that need prior environmental clearance under the Environmental Impact Assessment (EIA) notification, 2006.



IUCN WORLD CONSERVATION CONGRESS

- The IUCN World Conservation Congress is taking place in Abu Dhabi, United Arab Emirates, from 9 to 15 October 2025.
- It is organised every four years, which enables IUCN's more than 1,400 Member organisations to democratically determine the most pressing issues in nature conservation and actions to address them to help guide humanity's relationship with our planet.
- The IUCN is a global organization comprising 160 member countries and hundreds of civil society groups that work together towards environmental and biodiversity protection.

PHOSPHINE ON BROWN DWARF

- On a brown dwarf, called Wolf 1130C, dozens of light years from Earth, astronomers have detected trace amounts of phosphine, a molecule that is produced by living things on Earth.
- Phosphine, a molecule made of three hydrogen atoms and one phosphorus atom, is tricky to create and easy to destroy. On Earth, it is largely made by microbial life in swamp plants and animal intestines.
- Brown dwarfs are often called "failed stars" because they share some similarities with stars and others with planets. These objects form like stars from collapsing clouds of gas and dust. However, they do not have enough mass to consistently fuse hydrogen, a process that heats a star and makes it shine.

MACARTHUR GRANT WINNERS

- Optometrist Teresa Puthussery and Epidemiologist Nabarun Dasgupta are among the 22 'genius' winners of the MacArthur Grant. The winners of the fellowship will receive a cash award worth \$800,000 as stipend.
- The grant is constituted in the name of Catharine and John Donald MacArthur and recognises seminal and original contributions made by scientists, intellectuals and artists.

BADMINTON WORLD JUNIOR MIXED TEAM CHAMPIONSHIPS

- India won the first-ever medal in the BWF World Junior Mixed Team Championships organised in Guwahati, Assam, India from 6 to 19 October 2025.
- The Indian Badminton team settled for a bronze medal after losing to defending champions Indonesia in the semi-finals.

IRANI CUP 2025

- Vidarbha won the third Irani Cup title after beating Rest of India by 93 runs.

INDIA'S FIRST-EVER MEDAL AT JUNIOR JUDO WORLD CHAMPIONSHIPS



- Linthoi Chanambam became the first Indian to secure a medal at the Junior Judo World Championships, clinching bronze in the women's -63 kg category at the 2025 edition in Lima, Peru.
- She beat the Netherlands' Joni Geilen in the women's 63 kg category.



DreamIAS



BUSINESS AND ECONOMY

SC TO DECIDE ON SECURITIES TRANSACTION TAX'S CONSTITUTIONALITY

The Supreme Court of India on Monday decided to examine a plea challenging the constitutional validity of the Securities Transaction Tax (STT), a direct tax levied on securities transactions through a listed stock exchange, as imposed under the Finance Act, 2004.

A Bench headed by Justice J.B. Pardiwala issued formal notice to the Union Government on the petition filed by Aseem Juneja, represented by advocate Siddhartha K. Garg, who contended that the STT violated fundamental rights to equality and to trade or earn a livelihood and the basic right to live with dignity.

The petition clarified that the challenge to the STT was not because the taxation on the stock market participants had increased or that the taxation was currently high.

“The current petition is instead questioning the legality of the tax imposed in the form of STT... Firstly, it violates the principle of double taxation as the petitioner (a stock market trader) pays capital gains tax on the profit made in the market and then also has to pay STT, over and above this capital gains tax already paid on the same transaction,” the plea submitted.

Secondly, Mr. Juneja contended that STT was the only tax in India which was imposed on the “sheer act of carrying out a profession and has to be paid irrespective of whether there is a profit made or not, which makes it almost punitive or deterrent in nature.”

“Every tax in India is on the profit at the year-end but STT is applicable even if the stock market trader is operating in a loss. STT was introduced in 2004 to combat tax evasion in the stock market. This means that STT to stock market participants is what TDS is to salaried individuals. But the problem is that the TDS is refunded at the end of the year or adjusted with the income tax but no such provision is made for STT and the trader has to pay both,” Mr. Juneja noted.

MODERNISATION OF FINANCIAL ARCHITECTURE: HOW INDIA IS ADOPTING STABLECOINS

Stablecoins are a category of crypto assets that aim to maintain a stable value relative to a specified asset, or basket of assets, providing perceived stability. Various definitions of stablecoins exist, with different countries; standard-setting bodies such as the Financial Stability Board, Bank for International Settlements and International Monetary Fund; and many central banks contributing to these definitions.

Largely, stablecoins are blockchain-based digital assets designed to maintain a consistent value over time. They achieve this by being backed by reserves such as fiat currencies, commodities, or other crypto assets. They are a distinct class of Virtual Digital Assets (VDAs) backed by fiat currencies, commodities, or other assets. They aim to maintain a stable value, thereby distinguishing them from other VDAs.

Broadly, there are three types of stablecoins:

- Fiat-backed stablecoins — these are backed by reserves of traditional currencies such as the U.S. dollar or Euro, held in banks or regulated institutions. Examples include the USDT and USDC.



- Crypto-backed stablecoins — these are collateralised by other crypto assets. DAI, backed by Ethereum, is a leading example.
- Algorithmic stablecoins — these maintain stability through automated algorithms that adjust supply and demand, without relying on reserves. They are more experimental and risk-prone, as seen with projects like TerraUSD.

New financial plumbing

In the traditional financial world, cross-border payments are expensive, slow, and fragmented. Stablecoins are digital tokens backed by fiat reserves and powered by blockchain rails which are rewriting that equation. According to Visa's 2025 report Making Crypto Real, over \$220 billion worth of stablecoins are already in circulation, with transactions settling in seconds rather than days, and at a fraction of traditional costs. The average remittance via stablecoin costs as little as \$0.01, compared to \$44 through conventional banking routes.

This efficiency is not just a technical feat; it's economic evolution. In the same way that HTTP allowed information to flow seamlessly across the web, stablecoins could enable value to flow over digital rails in real time. The emerging vision, often described as "agentic payments," imagines a world where AI systems autonomously initiate transactions paying cloud providers, renewing subscriptions, or even reallocating treasury funds over stablecoin protocols.

A maturing global order

Stablecoins have outgrown their niche origins. Institutional finance has taken notice. BlackRock, Fidelity, and Bank of America have each announced or launched stablecoin initiatives, while Societe Generale became the first major European bank to issue a dollar-pegged coin in 2025. Regulators, once sceptical, are now codifying legitimacy. The EU's MiCA framework and the U.S. GENIUS Act provide clear definitions, reserve standards, and consumer protections, transforming stablecoins into regulated financial instruments.

In effect, what we are witnessing is not the replacement of traditional money but its modernisation. A new three-layered structure is emerging— the blockchain base layer which is decentralised, auditable, and interoperable; the reserve layer which includes regulated institutions backing stablecoins with transparent fiat or treasury reserves; and the interface layer where payment cards, APIs, and digital wallets are making stablecoins usable in everyday commerce.

Visa and Mastercard's moves to support stablecoin settlement on Ethereum and Solana are not experiments; they are strategic recalibrations.

Stablecoins are fast emerging as a new settlement layer for global finance. Value can now move as seamlessly as information flows online. By bypassing legacy rails like SWIFT, they transform cross-border transfers from days to seconds, creating a real-time, programmable foundation for the internet economy.

India's evolving stance

Until recently, India's approach to stablecoins was cautious. But the global tide is shifting, and so is New Delhi's calculus. Recently, Finance Minister Nirmala Sitharaman has stated that India needs to be ready to engage with crypto assets, like stablecoins.



The maturation of stablecoins mirrors the path the Internet itself once took: from anarchic experimentation to institutional adoption. What was once a tool for traders is now morphing into a universal payment backbone. In emerging markets, stablecoins are filling gaps that banks find tough to reach; in developed markets, they are cutting inefficiencies that banks long tolerated.

In Visa's language, stablecoins are "crypto's superpower." Their functional advantages, that is, speed, low cost, and transparency are undeniable. But their real promise lies in what they can enable. In an AI-driven, hyper-connected economy, money must move at machine speed.

The road ahead

India's digital infrastructure built on UPI, Aadhaar, and account aggregators has already redefined inclusion. The next leap is interoperability: not just between banks, but between blockchains, currencies, and algorithms. Stablecoins, with clear regulation and institutional backing, could provide that bridge.

The debate, then, is no longer whether stablecoins will shape the future of finance but how India chooses to shape stablecoins. As the world's financial plumbing gets rewired, nations that embrace stable, programmable, and globally interoperable money will define the rules of the new digital economy. Stablecoins will not replace fiat but they will redefine what fiat feels like in an Internet-operated world.

TELANGANA TOPS STATES IN UPI TRANSACTION INTENSITY: RBI PAPER

The usage intensity of Unified Payments Interface (UPI) transactions — measured in per capita volume terms — is highest in Telangana among all the States, according to a recent paper published in the Reserve Bank of India's bulletin. The study used PhonePe transaction data as a proxy to assess UPI intensity. Karnataka, Andhra Pradesh, Delhi and Maharashtra also recorded high UPI usage intensity.

The rise of UPI is likely a major factor driving the decline in cash demand in the economy, the paper notes. This shift is evident in the steady fall in ATM cash withdrawals as a percentage of GDP. The growing use of UPI for low-value, everyday transactions is reflected in the rising share of peer-to-merchant (P2M) payments, while the average value of a single UPI transaction — or the 'ticket size' — has been declining over time. The bulk of peer-to-merchant (P2M) transactions by volume fall within the sub-₹500 value range.

The RBI paper used data from PhonePe — a payment service that accounts for 58% of total UPI transaction volume and 53% of the total transaction value. As noted earlier, UPI usage intensity is highest in several southern and western States, and in Delhi. The paper attributes this to the presence of urban centres, economic hubs, and high levels of employment-driven migration in these regions.

Cash withdrawal intensity remains higher in many northeastern States, as well as in Kerala and Goa. Delhi features on this list too. According to the paper, this could be due to factors such as tourism and service-led cash usage, remittance inflows, the continued cash dependence of rural areas, and limited digital infrastructure.



REVISITING INDIA'S INDUSTRIAL BAROMETER: BASE YEAR REVISION OF IIP

As nations grow, their economies undergo a structural change: some sectors lose importance, others gain. Such structural transformation often accompanies long-term economic growth, marked by a progressive shift in the economic structure — from a high reliance on agriculture to increased industrial activity, and ultimately to the predominance of the services sector.

- In India, with brisk growth in services, the sector's share in Gross Value Added (GVA) has doubled since the early 1950s, averaging 62.5% over the first half of this decade. Agriculture and allied activities, while still essential, now contribute to about 15% of the GVA. But industry, at around 22% of the GVA, leaves scope for improvement.
- Initiatives like Make in India, Production Linked Incentive schemes, ease of doing business reforms, and industrial corridors, among others, are efforts to boost industrial growth. They have helped improve growth rates in each of the three sectors covered under the Index of Industrial Production (IIP) — mining, manufacturing, and electricity — in the post-Covid period, compared to before the pandemic.
- Recent GST rate cuts will further shore up consumption and support industrial recovery. Furthermore, developments related to deregulation, liberalisation and the emergence of new industries signal healthy dynamism.
- Why revise base year: With a more market-oriented economy, the need for quick and symmetric information has grown. Therefore, the statistical systems must adapt to capture full and correct information of the economy.
- The Ministry of Statistics and Programme Implementation (MoSPI) has been working on multiple fronts to ensure and improve data quality amid rapid changes. Towards this end, one of the steps was to constitute a Technical Advisory Committee for Base Year Revision of the All-India Index of Industrial Production (TAC-IIP).
- Apart from the government and the Reserve Bank of India, numerous stakeholders, from businesses to financial analysts, use IIP data. The IIP is a crucial input for quarterly GVA, used in planning and research.
- The compilation of IIP in India commenced with the base year 1937. To capture economic and technological shifts, it has undergone nine subsequent base year revisions. The TAC-IIP has now recommended a base year revision to 2022-23, in alignment with the new base year proposed for the GDP.
- Note that the methodology for compiling the IIP is very much aligned with the International Recommendations for the Index of Industrial Production (IRIIP), 2010, with suitable adaptations to reflect national requirements and data availability.
- The new series will incorporate updates to the product basket, improved data sources, and reworked sectoral weights. The following are some key improvements proposed:
 - Expansion of scope, coverage: For the first time, the new IIP aims to cover minor minerals and gas supply with information captured from key producing states/ministries.



- Treatment of 'not elsewhere classified' items: The new index ensures that 95% of their weights are assigned to specific items, with only 5% redistributed, thus significantly enhancing information content.
- Substitution of factories: The new IIP series proposes to introduce a systematic methodology for substituting factories that have shut down or altered production lines.
- Seasonally-adjusted series: The Ministry is working in collaboration with TAC-IIP towards putting in place a system to additionally provide a de-seasonalised IIP, in line with international practice.

Do You Know:

- The IIP maps the change in the volume of production in Indian industries. More formally, it chooses a basket of industrial products — ranging from the manufacturing sector to mining to energy, creates an index by giving different weight to each sector and then tracks the production every month.

GOVT NOTIFIES FIRST LEGALLY BINDING EMISSION CUT TARGETS FOR 4 SECTORS

The Centre has notified the first legally binding Greenhouse Gas Emission Intensity (GEI) Target Rules, 2025, for four high-emission sectors—aluminium, cement, chlor-alkali, and pulp and paper.

- The Rules set targets on greenhouse gas (GHG) emissions per unit of product output—for example, the gases released in the production of a tonne of cement or aluminium. Industries will earn carbon credits in lieu of meeting emissions targets, while those that fail to do so will have to buy credits or pay environmental compensation.
- The Rules will help operationalise the country's domestic carbon market under the Carbon Credit Trading Scheme (CCTS), 2023, which was launched to create a framework to trade carbon credits, facilitate slashing of carbon dioxide (CO₂) emissions and back India's climate commitments under the Paris Climate Agreement of 2015.
- India has committed to reducing the emissions intensity of its gross domestic product (the amount of energy used per unit of GDP) by 45 per cent by 2030 compared to 2005 levels, as part of its domestic commitments under the global agreement.
- Under the GEI Rules, 282 high-emission industrial units will have to comply with the mandatory targets for two years, 2025-26 and 2026-27. These 282 units consist of 186 cement units, 13 aluminium units, 30 chlor-alkali units and 53 pulp and paper units. Greenhouse gas (GHG) emissions intensity or GEI is the amount of GHGs that are emitted per unit of product output. For instance, the gases released in the production of a tonne of product, such as cement or aluminium.
- The Rules define GEI targets in terms of tCO₂e per equivalent output or product. tCo₂e or tonnes of carbon dioxide equivalent is the standard unit used to measure the impact of all GHGs and not just CO₂, based on their potential to warm the planet.
- The reduction of the planet-warming CO₂ gas will get the industries carbon credits in return, as part of the carbon credit trading scheme. These credits can then be traded on the domestic carbon market. The Bureau of Energy Efficiency will issue the carbon credits certificate.

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- Industries that do not achieve their targeted emissions reduction will have to plug the shortfall by buying carbon credits from the carbon market. In case the industries fail to comply or contravene with the provisions of the GEI Rules, the Central Pollution Control Board is mandated to impose environmental compensation.
- As per an analysis by Down to Earth magazine, in 2025-26, the targets require modest reductions averaging roughly 2-3 per cent, and increase to up to 7.5 per cent by 2026-27. Targets for the cement sector, such as ordinary Portland cement units, range from 4.7 per cent to 7.6 per cent and in pulp and paper, they reach up to 15 per cent over two years.

Do You Know:

- According to the World Bank, “a carbon tax directly sets a price on carbon by defining a tax rate on greenhouse gas emissions or – more commonly – on the carbon content of fossil fuels”. It is a type of carbon pricing, and the other type of carbon pricing is the emissions trading systems (ETS). The CBAM is a form of carbon pricing system.
- The CBAM or Carbon Tax was first introduced by the European Union in 2021. It taxes certain products coming in from other countries based on their carbon emissions footprint in their production process.

PM OPENS NAVI MUMBAI AIRPORT, SAYS REFLECT THE GOALS OF VIKSHIT BHARAT

Asserting that “national policy” is the foundation of his Government’s politics, Prime Minister Narendra Modi Wednesday inaugurated two mega infrastructure projects in Mumbai — Phase 1 of Navi Mumbai International Airport and Phase 2B of the underground Metro Line-3.

- Describing the projects as those that reflect the “much cherished goal of Viksit Bharat”, the Prime Minister underscored their potential to play a significant role in growth, development and employment generation.
- On his two-day visit to Mumbai, Modi also launched Mumbai One App, India’s first integrated common mobility platform, where commuters can access bus, metro, monorail and suburban rail services in the Mumbai Metropolitan Region (MMR) through a single ticket.
- Stating that the country had 74 airports in 2014, and 160 now, the Prime Minister said Indian aviation companies have placed orders of over 1,000 planes and that will lead to job creation not only for pilots, crew members and ground staff but also in maintenance, repairs and overhaul (MRO).

Do You Know:

- Navi Mumbai International Airport Private Limited (NMIAL) is a special purpose vehicle established for the development, construction, operation, and maintenance of the greenfield international airport project at Navi Mumbai, Maharashtra. NMIAL is a Public Private Partnership (PPP) between Mumbai International Airport Limited (MIAL), a subsidiary of Adani Airports Holdings Limited (AAHL), which holds the majority stake of 74 percent, while the City and Industrial Development Corporation of Maharashtra Limited (CIDCO), a Government of Maharashtra undertaking, holds the remaining 26 percent.
- Public Private Partnerships (PPPs) in infrastructure refer to the provision of a public asset and service by a private partner who has been conceded the right (the “Concession”) for the

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purpose, for a specified period of time, on the basis of market-determined revenue streams that allow for commercial return on investment.

- Listing out a slew of measures to revive PPP model, the committee, headed by Vijay Kelkar, former finance secretary formed in 2015, said that the government should encourage development of infrastructure sectors including airports, ports and railways under the PPP mode by ensuring easier funding. It also recommended review of model concession agreements, raising of funds through zero coupon bonds and setting up of independent regulators.
- The other suggestions include restrictions on number of banks in a consortium, building up of risk assessment and appraisal capabilities by banks and specific RBI guidelines to lenders for encashment of bank guarantees.

EXPRESS VIEW: THE TATA TRUSTS MUST PUT THEIR HOUSE IN ORDER

Nine years after Cyrus Mistry was unceremoniously removed as chairman of Tata Sons, and a year after the death of the patriarch, Ratan Tata, the shadow of both still looms over the storied group. Long held as an exemplar in corporate governance, the group is now a house in disorder. Sharp differences of opinion have emerged between the trustees of the Tata Trusts, which together hold roughly 66 per cent stake in Tata Sons, the group's holding company. Considering the sheer breadth of sectors it operates in — from steel to auto, software, retail and semiconductors — another power struggle at the conglomerate could have far-reaching ramifications. Uncertainty at the top and a long-drawn-out conflict will impact decision-making, affecting not only the group's businesses but the wider economy as well.

Reports suggest that the disagreements between the trustees arose over board appointments, access to sensitive information and the listing of Tata Sons. The latter also has implications for the Shapoorji Pallonji Group — the group holds an 18.37 per cent stake in Tata Sons — as a listing would help it unlock value, ease its debt burden. The RBI had classified Tata Sons as an upper-layer NBFC and given it a deadline of September 30, 2025 for listing. But, with the deadline passing — Tata Sons has moved to deregister as an NBFC — the central bank is still deliberating. Last Wednesday, RBI Governor Sanjay Malhotra is reported to have said that “any entity which has a registration, till it is not cancelled, will continue to do its business”. A few days ago, Tata Trusts chairman Noel Tata, vice chairman Venu Srinivasan, trustee Darius Khambata and Tata Sons chairman N Chandrasekaran met with Home Minister Amit Shah and Finance Minister Nirmala Sitharaman. While government intervention in the matter would raise a red flag, the fact that the trustees held a meeting with senior Union government ministers underlines the seriousness of the situation.

The absence of a towering figure, after the death of Ratan Tata, is being felt. Unlike the West, capitalism in India has tended to be more promoter-driven. For all their limitations, promoters do tend to bring stability to a business. But the history of the Indian corporate sector is also littered with examples of how, when strong promoters have passed away or did not have a clear succession line, the group either weakened or split. Under Ratan Tata's stewardship, the Tatas sailed through storms, with an approach that prized achieving “consensus and unanimity on issues”, as Vijay Singh, who was on the board of Tata Sons, told this newspaper. For a group that has prided itself on its principled approach to business, and has long been held in high regard for its integrity, this saga must be quickly brought to an end. The Tata Trusts must put their house in order — it's vital to their future.



LIFE AND SCIENCES

WHAT IS A SUPERMOON?

A supermoon occurs when a full moon or new moon coincides with the moon's closest approach to the earth in its elliptical orbit — a point known as the perigee. Because the moon's orbit is not a perfect circle, its distance from the earth varies throughout the month by around 50,000 km. When the moon is near its perigee and also directly opposite the sun, the full moon appears about 14% larger and 30% brighter than when it is at its farthest point. This is the supermoon.

A supermoon was visible on the night of October 7 and will appear twice more in November and December.

The astrologer Richard Nolle popularised the term 'supermoon' in the 1970s, but it has since been adopted by astronomers and the media to describe the visually striking lunar events. Though the difference in size is subtle to the naked eye, the enhanced brightness often makes the moon appear vivid against the night sky, especially when seen low on the horizon.

Supermoons also influence the tides, creating perigean spring tides. These tides are slightly higher and lower than usual because the moon's stronger gravitational pull acts in concert with that of the sun. While the changes are typically modest, they can exacerbate coastal flooding when combined with storm surges.

Culturally, supermoons have long captured human imagination, inspiring folklore and spiritual observances across civilisations. They also offer opportunities for astronomers and photographers to observe lunar surface details and study tidal effects more clearly.

XENO BIOLOGY: BEYOND EARTH

Xenobiology is a new and rapidly growing branch of science that studies how life could exist using biological systems different from those that prevail on earth. The word comes from the Greek for "the study of alien life".

While ordinary biology examines organisms that depend on DNA, RNA, and proteins made from the same 20 amino acids, xenobiology is concerned with the possibility of something more. Its central questions are whether earthlife is the only possible form of life or whether organisms can be built with alternative genetic codes, unusual chemical bonds, and/or in environments where water is replaced by another solvent such as methane or ammonia.

In laboratories, xenobiologists build and test such possibilities. Some have engineered bacteria whose DNA includes extra letters beyond the natural A, T, C, and G, producing proteins with novel structures and functions.

Others have designed synthetic cells that can store information in artificial molecules or run on new metabolic pathways. These experiments help scientists understand the boundaries of what counts as "life" and reveal which biochemical features are essential for life to evolve and reproduce.

Xenobiology also has practical and ethical value. Scientists hope to use the alien biology it deals with to programme microbes to make drugs or break down toxic waste while remaining biologically contained because they can't survive outside controlled conditions. Ultimately,



xenobiology joins chemistry, genetics, and astrobiology in asking how many forms of life the universe can support.

2025 NOBEL PRIZE IN MEDICINE

The first Nobel Prize of this year, the prize for Physiology or Medicine, has been announced. Mary E Brunkow, Fred Ramsdell, and Shimon Sakaguchi have been honoured for their work on the human immune system.

- The Nobel Prizes generally follow the same schedule every year, with the Medicine prize coming first, followed by Physics, Chemistry, Literature, Peace, and Economics.
- They have been awarded for their discoveries on peripheral immune tolerance which have been essential for understanding how the immune system functions, and key to developing therapies for cancers and autoimmune diseases.
- How does the immune system fight viruses, bacteria and microbes without damaging the body's own cells?
- This question had long perplexed researchers studying the immune system. By the 1980s, researchers had recognised central tolerance, a process by which T cells that recognise the body's own proteins are eliminated. T cells are a type of white blood cell that helps the body effectively fight off infections.
- Although the presence of a special type of T cell which prevents other T cells from attacking the body was previously hypothesised, this theory was abandoned after some researchers presented false evidence and far-fetched conclusions.
- Sakaguchi swam against the tide, and in a 1995 paper presented evidence for a new type of T cell "police" that essentially keeps other T cells from attacking the body's own cells. This new class was called regulatory T cells, and the process by which it protected the body came to be known as peripheral tolerance.
- Sakaguchi surgically removed the thymus — the organ where T cells mature — in newborn mice. His hypothesis was that this would result in the mice developing fewer T cells, and having a weaker immune system. But when this surgery took place three days after the mice were born, they developed autoimmune diseases, with their immune system going into an overdrive.
- To understand what was happening, Sakaguchi injected T cells isolated from genetically identical healthy mice into those without the thymus. These mice did not develop autoimmune conditions. This convinced Sakaguchi of the presence of the T cell "police". He published his results a decade later, after figuring out how to detect these cells.
- Brunkow and Ramsdell, who worked at the biotech company Celltech Chiroscience, decided to look for this needle in a haystack.
- In 2001, they revealed that the FOXP3 gene was responsible for autoimmunity in the scurfy mice as well as the human disease IPEX.
- And, within two years, this finding allowed Sakaguchi to prove that the FOXP3 gene controls the development of regulatory T cells.



- Once the function of these new T cells were known, researchers realised that some tumours can attract a large number of these regulatory T cells, thereby protecting it from the other T cells.
- “When a cancerous tumour has a lot of regulatory T cells, they can prevent other T cells from killing the cancerous cells. This is one of the obstacles that Car-T cell therapy — therapies where a person’s own immune cells are modified to better fight the cancer cells — tries to overcome.

Do You Know:

- The immune system protects the body against diseases by neutralising disease-causing pathogens like bacteria and viruses. Key to this process is the ability of the immune system — in particular, a special kind of white blood cells, called T-cells — to distinguish between the cells of the pathogen and the host body.
- When this does not happen properly, it leads to auto-immune diseases, in which the T-cells start damaging the body’s own cells.
- T-cells are trained to be selective in their approach but this training is not perfect. Sakaguchi identified a special group of T-cells, called regulatory T-cells, or Tregs, that suppresses the activity of other T-cells if they had a propensity to attack the body’s own tissues.
- Brunkow and Ramsdell later discovered the gene that enables some T-cells to function as Tregs. Together, they complete the picture of the immune system.
- Their discovery has important implications in the treatment of auto-immune diseases. Organ transplants get complicated because the immune system identifies them as foreign, and begins to attack them. Scientists hope that regulation of Tregs activity could smoothen this process.
- In cancer, sometimes the reverse process happens. The cancerous cells attract too many Tregs, so that the normal T-cells, which should ideally have been killing the cancerous cells, become ineffective.

TRIO WIN NOBEL FOR REVEALING QUANTUM PHYSICS IN ACTION (MACROSCOPIC QUANTUM TUNNELLING)

Very small particles, on the scale of an atom or smaller, behave in ways that are very different compared to objects we encounter in our everyday lives. The behaviour of small particles, extremely counter-intuitive at times, is described by the laws of quantum mechanics.

- This year’s Nobel Prize in physics has gone to three scientists who showed that it was possible even for large systems, made up of billions of these small particles, to exhibit quantum behaviour under carefully controlled conditions.
- John Clarke, Michel Devoret and John Martinis have been awarded the 2025 Nobel Prize in Physics “for the discovery of macroscopic quantum mechanical tunnelling and energy quantisation in an electric circuit”.
- Their work, done in the mid-1980s, set the stage for the development of quantum computers, which is one of the most active areas of scientific research right now.

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- John Clarke, Michel Devoret and John Martinis were working together at the University of California, Berkeley, when they performed a series of experiments in 1984 and 1985 on special electric circuits.
- Clarke, a professor at the University of California, Berkeley, had been exploring some of these phenomena with the Josephson junction in the 1980s, when he was joined by Devoret and Martinis.
- They used a similar set-up as that of Josephson, but had to take meticulous care to isolate the entire set-up from its environment to avoid interference. The slightest interference could destroy the quantum effects.
- What they were eventually able to demonstrate is that the entire circuit, not just the flowing electrons in the Josephson set-up, exhibited quantum behaviour.
- The circuit could exist only in certain discrete energy states, each corresponding to a particular value for current, not in any in-between energy states, which is a distinctly quantum behaviour. Also, the circuit could jump between these discrete energy states across the insulating barrier, demonstrating macroscopic quantum tunnelling.
- The significance of their work becomes clearer when we consider the trajectory of quantum computing. Today's quantum computers — still experimental but growing more capable — rely fundamentally on the principles that Clarke, Devoret, and Martinis helped establish.
- Superconducting qubits, one of the leading platforms for quantum computation, are direct descendants of the circuits these researchers pioneered.
- By showing that macroscopic quantum systems could be controlled and manipulated, they provided the conceptual and practical foundation for an entire technological revolution.

Do You Know:

- 2025 is the International Year of Quantum Science and Technology, marking a century since the development of modern quantum mechanics. The field has reached a critical inflection point. Quantum computers, while still limited, are beginning to tackle problems beyond the reach of classical machines.
- Superposition: Quantum computing uses 'qubit' (or quantum bit) as its fundamental unit and their stability is crucial for harnessing quantum states for computation. Superposition refers to the ability of these particles to exist in multiple locations simultaneously. This phenomenon persists only until the particle is observed. Once observed, the particle appears at one location and ceases to exist in the others.
- Entanglement: It is another unusual property where particles that have previously interacted can instantaneously influence each other's behavior, regardless of the distance separating them. When one entangled particle is measured, the state of the other particle is immediately determined, even if they are far apart. This intriguing property can help in preventing security breaches in quantum communication by entangling qubits of sender and receiver.
- Interference: It is a wavelike superposition of subatomic particles' states that affect the probabilities of states of these particles when measured. While entanglement is a



phenomenon between two particles, interference is an effect of many particles surrounding each other.

MAKING 'ROOM' FOR NEW USES OF CHEMISTRY (2025 NOBEL PRIZE IN CHEMISTRY FOR METAL-ORGANIC FRAMEWORKS – MOFS)

- In most materials, atoms and molecules are packed tightly together, leaving little or no empty space between them. This year's Nobel Prize in Chemistry has been awarded to three scientists who created novel materials in which atoms and molecules are linked in a way that leaves large, neatly arranged open spaces inside the molecular structure.
- These spaces are extremely useful for storing or trapping other substances, making these materials — called Metal-Organic Frameworks, or MOFs — highly valuable in many situations.
- The Nobel Prize in Chemistry, announced on Wednesday, recognises the work of Susumu Kitagawa, Richard Robson, and Omar Yaghi in creating these special molecular constructions, made by linking metal atoms with carbon-containing molecules.
- Susumu Kitagawa, working separately and inspired by the principle of “the usefulness of useless”, built sturdier structures, and also showed that gases could pass through the cavities in them.
- Different kinds of MOFs can be used for applications like harvesting water from desert air, capturing carbon dioxide, or storing toxic gases.
- The great utility of MOFs lies in their ability to temporarily hold other substances in the empty spaces they contain, like a foam or sponge is able to hold air or water, and release it when needed.

Do You Know:

- MOFs are a class of materials composed of metal ions connected by organic molecules, forming a three-dimensional network with large, porous cavities. This design allows gases and liquids to flow through, making MOFs highly adaptable for various applications.
- Metals can form bonds in multiple directions, and thus metal ions are the anchors here, like joints in a scaffolding. Organic molecules link them together. Organic molecules are flexible, can form rings and chains, and can be designed to have chemical groups with specific properties.
- The unique properties of MOFs have led to their application in various fields:
 - Water harvesting: MOFs can extract water from dry air, offering a potential solution for water-scarce regions.
 - Pollutant Removal: They can filter out harmful substances like PFAS from water, addressing environmental contamination.
 - Carbon capture: MOFs are effective in capturing carbon dioxide, aiding in efforts to mitigate climate change.



- Hydrogen storage: Their porous nature allows for the safe storage of hydrogen, crucial for clean energy applications.

TRUMP'S QUEST FOR NOBEL PEACE PRIZE FALLS SHORT AGAIN DESPITE NOMINATIONS

U.S. President Donald Trump was passed over for the Nobel Peace Prize on Friday despite jockeying from his fellow Republicans, various world leaders and — most vocally — himself.

Venezuelan Opposition leader María Corina Machado was awarded the prize. The Norwegian Nobel Committee said it was honouring her “for her tireless work promoting democratic rights for the people of Venezuela and for her struggle to achieve a just and peaceful transition from dictatorship to democracy.”

The White House responded bitterly, with communications director Steven Cheung saying members of “the Nobel Committee proved they place politics over peace” because they didn’t recognise Mr. Trump.

“He has the heart of a humanitarian, and there will never be anyone like him who can move mountains with the sheer force of his will,” Mr. Cheung wrote on social media.

The White House did not comment on Ms. Machado’s recognition. Her opposition to President Nicolás Maduro in Venezuela aligns with the Trump administration’s own stance on Venezuela, and Secretary of State Marco Rubio has praised her as “the personification of resilience, tenacity, and patriotism.”

Mr. Trump, who has long coveted the prestigious prize, has been outspoken about his desire for the honour during both of his presidential terms, particularly lately as he takes credit for ending conflicts around the world. The Republican President has expressed doubts that the Nobel committee would ever grant him the award.

“They’ll have to do what they do. Whatever they do is fine. I know this: I didn’t do it for that. I did it because I saved a lot of lives,” Mr. Trump said on Thursday.

The Hostages Families Forum in Israel issued a statement on Friday continuing to support Mr. Trump. “President Trump’s unprecedented achievements in peacemaking this past year speak for themselves, and no award or lack thereof can diminish the profound impact he has had on our families and on global peace,” it said.

Crossed deadline

Although Mr. Trump received nominations for the prize, many of them occurred after the February 1 deadline for the 2025 award, which fell just a week and a half into his second term. His name was, however, put forward in December by Republican Rep. Claudia Tenney of New York, her office said in a statement, for his brokering of the Abraham Accords, which normalised relations between Israel and several Arab states in 2020.

Nevertheless, Mr. Trump and his supporters are likely to view the decision to pass over him for the award as a deliberate affront to the U.S. leader, particularly after his involvement in getting Israel and Hamas to initiate the first phase of ending their devastating two-year-old war.

Jørgen Watne Frydnes, chair of the Norwegian Nobel Committee, said the committee has seen various campaigns in its long history of awarding the peace prize. “We receive thousands and



thousands of letters every year of people wanting to say what for them leads to peace,” he said. “This committee sits in a room filled with the portraits of all laureates, and that room is filled with both courage and integrity. So we base only our decision on the work and the will of Alfred Nobel.”

The peace prize, first awarded in 1901, was created partly to encourage ongoing peace efforts. Alfred Nobel stipulated in his will that the prize should go to someone “who shall have done the most or the best work for fraternity between nations, for the abolition or reduction of standing armies and for the holding and promotion of peace congresses.”

Three U.S. leaders

Three sitting U.S. Presidents have won the Nobel Peace Prize: Theodore Roosevelt in 1906, Woodrow Wilson in 1919 and Barack Obama in 2009. Jimmy Carter won the prize in 2002, a full two decades after leaving office. Former Vice President Al Gore received the prize in 2007.

Mr. Obama, a Democrat who was a focus of Mr. Trump’s attacks well before the Republican was elected, won the prize early in his tenure as president.

“He got the prize for doing nothing,” Mr. Trump said of Mr. Obama on Thursday. “They gave it to Obama for doing absolutely nothing but destroying our country.”

As one of his reasons for deserving the award, Mr. Trump often says he has ended seven wars, though some of the conflicts the President claims to have resolved were merely tensions and his role in easing them is disputed. But while there is hope for the end to Israel and Hamas’s war, with Israel saying a ceasefire agreement with Hamas came into effect on Friday, much remains uncertain about the aspects of the broader plan, including whether and how Hamas will disarm and who will govern Gaza. And little progress seems to have been made on Russia’s war in Ukraine, a conflict Mr. Trump claimed during the 2024 campaign that he could end in one day — he later said he made that remark in jest.

The full list of people nominated is secret, but anyone who submits a nomination is free to talk about it.

Others who formally submitted a nomination for Trump for the Nobel Peace Prize — but after this year’s deadline — include Israeli Prime Minister Benjamin Netanyahu, Cambodian Prime Minister Hun Manet and Pakistan’s government, all citing his work in helping end conflicts in their regions.

NOBEL TO MARIA CORINA MACHADO SHOWS DEMOCRACY IS A WORK IN PROGRESS

Over 20 years ago, when Maria Corina Machado first confronted Venezuela’s deep institutional rot, she knew the choice was clear: It would be ballots over bullets. As she challenged the authoritarian regimes of Hugo Chavez and his successor Nicolas Maduro, demanding free and fair elections and campaigning against their repressive measures, she was tried for treason, stripped of her seat in the National Assembly, repeatedly threatened with physical violence, barred from election and forced to go into hiding. That she has never stopped speaking up and reaching out to her beleaguered fellow citizens is a measure of her great personal courage. For the Nobel Committee, which has honoured her long fight with the Peace Prize for 2025, it is also an exemplar of what it takes to keep the flame of democracy alive.

At a time of deepening authoritarianism around the world, this year’s Peace Prize acknowledges that the work of democracy is never done, that it must be defended as much against tyranny as



against cynicism and indifference. Democracy, as the Nobel Committee has said, “depends on people who refuse to stay silent, who dare to step forward despite grave risk and who remind us that freedom must never be taken for granted”. The refusal to be mute in the face of despotism and cruelty often comes at great personal cost — imprisonment, exile, violence and even death — but this is what makes the fight so precious.

Peace, of course, is not just the absence of war. Peace can exist only where there is freedom, where people have the right to choose and where they have a voice and hand in shaping their nation’s future. The honouring of Machado’s tireless efforts to restore democracy in her country is an endorsement of the fact that the work of peace is not just conducted at the high diplomatic table; it happens in the trenches of the everyday struggle for justice and in the labour of all those who resist tyranny at every level.

MAKING SENSE

At a time of two wars in the world, a writer described as a “master of the apocalypse” has been awarded the Nobel Prize in Literature for 2025. Hungarian author László Krasznahorkai was chosen by the Swedish Academy “for his compelling and visionary oeuvre that, in the midst of apocalyptic terror, reaffirms the power of art”. The 71-year-old novelist and screenwriter has won many accolades and was a perennial candidate. Often compared to greats such as Franz Kafka, Fyodor Dostoevsky and Herman Melville, his dystopian, absurd and melancholic stories mirror life in Hungary under oppression and beyond in the pre- and post-fall of the Iron Curtain era, with a chilling resonance to contemporary times. He gained recognition with his 1985 novel of ideas, *Satantango*, translated into English by George Szirtes in 2012. It revolves around a group of destitute residents of a collective farm on the eve of the fall of communism, waiting for a miracle, which needless to say would not happen. The tone is set with the epigraph, from Kafka’s *The Castle*: ‘In that case, I’ll miss the thing by waiting for it.’ Krasznahorkai has collaborated with filmmaker Béla Tarr to adapt his works for the cinema. With his second book, *The Melancholy of Resistance*, he began to be hailed as a postmodern visionary. It was published in Hungarian in 1989, when the wall came down, and first translated into English in 1998.

In *The Melancholy*, a circus comes to a town with the carcass of a giant whale, and sinister happenings follow. His unbroken sentences — like a fellow laureate, Jon Fosse, Krasznahorkai too often omits full stops — are often deemed difficult and demanding. His translator calls Krasznahorkai’s work “a slow lava flow of narrative, a vast black river of type”. Krasznahorkai’s travels to China and Japan in the early 2000s inspired his contemplative novel, *Seiobo There Below*. The breadth of his oeuvre is evident in the homage he pays to literary giants: Dostoevsky’s *The Idiot* gets a relook in Baron Wenckheim’s *Homecoming*; Melville’s ghost haunts *Spadework for a Palace: Entering the Madness of Others*, a story set in Manhattan. In an interview to writer Hari Kunzru for *The Yale Review*, Krasznahorkai says “the apocalypse is now”, pointing out that “hell and heaven are both on earth, and they are here now”. About the role of art in the future, he says: “Art is humanity’s extraordinary response to the sense of lostness that is our fate.” By awarding literature’s top prize to Krasznahorkai, the Swedish Academy signals that it is turning to serious but innovative literature and art in a world where little makes sense.

THE 2025 IG NOBEL PRIZES: LAUGH, AND THEN THINK

As one report in *Science* pointed out, the Ig Nobel prizes are light-hearted events that offer a humorous satire about the prize. The ‘Ig’ prefix stands for a non-honourable or lower status and



the prizes' name is a pun on the word 'ignoble', striking a humorous contrast with the real Nobel Prizes, which advance our knowledge in science, technology, literature, peace, and economics.

These satirical prizes have been awarded annually since 1991 to promote public engagement with scientific research. They take aim at research that makes people laugh and then makes them think. Each winner receives a single banknote of 10 trillion Zimbabwean dollars, which were worth 40 US cents when they were demonetised and are no longer in use. In contrast, each Nobel Prize winner receives a gold medal (engraved with the picture of the prizes' founder Alfred Nobel) and around 11 million Swedish kronor, divided among up to three laureates if a prize is shared.

Each winner also gets to present her/his lecture at a ceremony in the Swedish Academy of Sciences in December every year. In contrast, the Ig Nobel is presented at a ceremony in Boston, Massachusetts and each winner is allowed only one minute to present their achievements.

The Ig Nobel prizes are picked by the magazine *Annals of Improbable Research*. According to their website, these are the 2025 Ig Nobel prize laureates: Tomoki Kojima and colleagues for experiments showing how cows painted with zebra-like stripes were bitten less often by flies (biology); Vikash Kumar and Sarthak Mittal from Uttar Pradesh on how the experience of a shoe rack can be affected by foul-smelling shoes in it (engineering design or ergonomics); the medical historian and internist Prof. William Bean of Columbia University, USA, who documented how his fingernails grew (literature); Marcin Zajenkowski of Poland and Gilles Gignac of Australia for showing that people who are narcissists have their self-esteem rise when told they are intelligent (psychology); researchers from Nigeria, Togo, Italy, and France for showing how rainbow lizards acquire a taste for certain kinds of pizza (nutrition); Julie Mennella and Gory Beauchamp of the USA for showing how, when mothers eat garlic, their breast-feeding infants took in more milk (paediatrics); the team of Rotem Naftalovich, Daniel Naftalovich, and Frank Greenway of the USA for showing that Teflon, usually used to coat kitchen utensils, is a good additive to increase food volume and hence satiety without increasing the calorie content (chemistry); and for researchers from the Netherlands, the UK, and Germany for showing how consuming moderate amounts of alcohol can improve the ability to speak a foreign language (peace). (Note: Prof. Bean passed away in 2020 and his son received the prize.)

It is interesting to note that so far only one scientist has won both an Ig Nobel prize and a Nobel Prize. This is the physicist Andre Geim of Manchester University in the UK. He was awarded the Ig Nobel prize in 2000 together with Michael Berry for levitating a frog in a strong magnetic field using its intrinsic magnetism, in the physics category.

In 2010, Prof. Geim and Konstantin Novoselov were awarded the Nobel Prize for physics "for groundbreaking experiments regarding the two-dimensional material graphene".

KIRIGAMI PARACHUTES LAND ON TARGET

Parachutes safely deliver people, cargo, and humanitarian aid. Yet conventional parachutes are expensive to make and fragile. They are also complex to assemble and require skilled labour, limiting their availability for rapid or low-cost deployment. Finally, when released into the air, traditional parachutes tend to drift sideways and miss their intended targets, which can be a serious drawback in contexts such as food or medicine drops in disaster zones.

In a new study in *Nature*, researchers from Polytechnique Montreal in Canada and the Institut Polytechnique de Paris in France looked for inspiration in kirigami, the Japanese art of cutting



paper to create complex forms. Engineers have recently adopted kirigami principles to design flexible materials that can stretch, twist, and morph into new shapes. The researchers asked whether kirigami cuts in thin circular sheets could similarly transform an ordinary disc into a simple, stable parachute. Because if this is possible, parachutes can be fabricated by cutting a single sheet with lasers, eliminating assembly while improving natural aerodynamic control.

By harnessing flow-induced reconfiguration — a phenomenon seen in leaves and seeds — the team aimed to design parachutes that wouldn't only slow descent but also fall reliably near a target, independent of the initial release angle.

RENEWABLES EDGE OUT COAL AS WORLD'S BIGGEST SOURCE OF ELECTRICITY: MANY POSITIVES, SOME CONCERNS

The first half of this year saw something significant — for the first time ever, renewable energy eclipsed coal as the world's leading source of electricity, according to new data from the UK-based energy think tank Ember.

- India's grid has broadly mirrored this trend, with separate government data up to June 30 showing that non-fossil fuel sources in the country accounted for 50.1 per cent of its installed electricity capacity, displacing thermal.
- These sources — which include nuclear, large hydro, and renewables — made up just 30 per cent of installed capacity in India up to 2015 and 38 per cent in 2020, before surging sharply over the last five years, on the back of solar and wind power.
- When the Paris Agreement was signed in 2015, India had committed to achieving 40 per cent non-fossil fuel capacity by 2030, a target hiked to 50 per cent in 2022.
- The new Ember report, which analysed changes in global electricity generation from January to June 2025 compared with the same period last year, said that while coal fell in both China and India, the dip in India was deemed as “temporary” while it was cited as “more structural” in China.
- Solar and wind outpaced demand growth in the first half of 2025: Global electricity demand grew by 2.6 per cent overall in the first half of 2025, with this increase more than met by increases in solar (31 per cent) and wind (7.7 per cent) generation.
- Coal dips in China and India — temporarily in India, but more structurally in China: As the strong rise in solar led to renewables overtaking coal generation for the first time on record in the first half of 2025, renewable's share of global electricity rose to 34.3 per cent while coal's share fell to 33.1 per cent.
- Power sector emissions plateaued: Despite global electricity demand rising, emissions fell slightly in the first half of 2025. Declines in China and India reflected clean generation growth outpacing demand, while emissions increased in the EU and the US compared with the same period last year.

Do You Know:

- As of June 2025, India's total installed capacity stood at 485 gigawatts (GW), of which renewables – including solar, wind, small hydro, and biogas – accounted for 185 GW, according to the Ministry of New and Renewable Energy.

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- Large hydro contributed 49 GW, and nuclear 9 GW, taking the total non-fossil fuel capacity just over the halfway mark. Thermal power, mostly coal- and gas-based, made up the remaining 242 GW, or 49.9 per cent. In 2015, thermal's share was 70 per cent.
- With the surge in green power, carbon dioxide emissions from India's electricity sector in the first half of this year too have shown a marginal decline from the same period last year, a new analysis has revealed.
- This break from the trend was the first time India's CO₂ emissions from the power sector showed a dip and was partly on account of better weather conditions dampening demand, according to data from the UK-based Centre for Research on Energy and Clean Air. More than half of India's CO₂ output comes from coal used for electricity and heat generation, making this sector the most important by far for the country's emissions.
- India's focus on rapid expansion of renewables in the absence of energy storage systems, especially over the last decade, is now resulting in increasing instability in the country's electricity grid.
- The issue is compounded by the scaling down of thermal expansion, which provides critical baseload support to the grid during evenings in summer months, when solar generation dips and demand remains high.
- The Indian government has begun moving proactively on the policy front in recent months, with a push for energy storage and a policy pivot back towards thermal, and nuclear, especially the small modular reactors segment.
- In February, the Central Electricity Authority (CEA) issued an advisory to co-locate energy storage systems with solar projects in future tenders to ensure grid stability.
- The Ministry of Power has also expanded its viability gap funding (VGF) scheme for battery storage, adding 30 gigawatt-hours (GWh) to the 13 GWh already under implementation, with a total outlay of Rs 5,400 crore.

ASIA'S CARBON CAPTURE PUSH MAY JEOPARDISE GLOBAL CLIMATE GOALS

New report warns CCS reliance could add 25 bn tonne emissions and lock region into fossil fuel pathways; it estimates India would need \$4.3 bn in govt. aid to enable CCS adoption — raising questions if such investment would be better directed toward scalable, low-cost alternatives.

A report by global science and policy institute Climate Analytics has warned that Asia's expansive plans for Carbon Capture and Storage (CCS) could lead to nearly 25 billion tonne of additional greenhouse gas emissions by 2050, threatening the Paris Agreement's 1.5°C climate target and locking the region into costly and uncompetitive fossil fuel pathways.

Released on Monday, ahead of the Japan CCS Summit on October 15-16, the report evaluated CCS strategies across nine major economies — China, India, Japan, South Korea, Indonesia, Thailand, Malaysia, Singapore, and Australia — which together account for over half of global fossil fuel use and greenhouse gas emissions.

Bill Hare, CEO of Climate Analytics, said, "Asia is at a crossroads, while countries haven't yet gone fully down the CCS path, many are tailoring policies to protect fossil fuels. This is a very risky strategy, not only for the Paris Agreement, but for these economies themselves."

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The report identifies two major risks: an “underperforming high-CCS” pathway, where CCS is deployed but fails to meet expected capture rates, and an “unachieved high-CCS” pathway, where CCS is promoted but not realised, diverting resources from proven zero-emission technologies. In either scenario, the region could emit an additional 24.9 gigatonnes of CO₂-equivalent by 2050 - more than the cumulative fossil fuel emissions of South Korea and Australia combined.

More support

James Bowen, lead author of the report, said, “We find a strong possibility that Asian countries could increase their support for CCS through to 2050, risking a significant lock-in of unabated fossil fuels and stranded asset costs, let alone risks to the world achieving the Paris Agreement 1.5°C warming limit.”

India’s emerging role

India, one of Asia’s largest emitters alongside China and Japan, is developing a national CCS mission aimed at scaling up deployment. The report noted, however, that India’s CCS presence remains minimal, with no significant operational projects or transport and storage infrastructure.

India is largely disconnected from the Japan–South Korea–Southeast Asia–Australia CCS nexus.

Despite this, India’s industrial growth trajectory makes it a critical player in the CCS debate. The country is already the second-largest steel consumer globally, with demand projected to grow 6.3% annually between 2025 and 2030. Cement consumption in India and South Asia could rise by over 40% during 2025–2035.

These sectors are considered “hard-to-abate” and potential candidates for CCS, though the report cautions that emerging zero-emission technologies may offer more cost-effective solutions.

India’s largely domestic fossil fuel use gives it flexibility to shift toward renewables without external market pressures. The report highlights India’s progress in deploying renewables, electric vehicles, and green hydrogen, suggesting the country could avoid CCS dependence if it prioritises clean energy and industrial innovation.

However, the economic risks stay significant. The report estimates India would need approximately \$4.3 billion in government support to enable CCS adoption — raising questions about whether such investment would be better directed toward scalable, low-cost alternatives.

Lifeline for fossil fuels

Despite being marketed as a climate solution, CCS has consistently underperformed. Capture rates often hover around 50%, far below the 95% needed for meaningful abatement. Moreover, 80% of current CCS projects use captured CO₂ for enhanced oil recovery (EOR), extending fossil fuel extraction.

The report finds CCS in the power sector could result in electricity costs up to twice that of renewables backed by storage, making it economically unviable in most Asian markets.

Most CCS projects in Asia target sectors with viable zero-emission alternatives, such as natural gas, LNG processing, and hydrogen production. Hard-to-abate sectors like cement and steel received minimal CCS investment.



Governments in Japan, South Korea, and Australia are among the most active CCS proponents, offering financial and regulatory support to sustain fossil fuel production. Southeast Asian nations, including Indonesia, Malaysia, and Thailand, are positioning themselves as CO₂ storage hubs, often in partnership with oil and gas companies. Singapore is developing a regional CCS hub with ExxonMobil and Shell, reinforcing its role as a fossil fuel transit centre.

Alternatives cheaper

The report urges Asian governments to pursue a “deliberate low-CCS pathway,” prioritising renewables, electrification, and energy efficiency. These technologies are already more cost-effective than fossil fuels even without CCS.

In 2023, the global average cost of solar and wind power was significantly lower than fossil fuel-based electricity. Countries like China, India, and Vietnam have already seen renewables outcompete fossil fuels in cost.

A high-CCS pathway could cost \$30 trillion more globally than a low-CCS pathway by 2050.

ALL ABOUT ASKING THE RIGHT QUESTION: HOW ACCURATE ARE CLIMATE MODELS?

US President Donald Trump, in his speech at the United Nations General Assembly on September 23, said that climate change was the greatest “con job” ever. “All of these predictions made by the United Nations and many others, often for bad reasons, were wrong. They were made by stupid people that have cost their countries fortunes and given those same countries no chance for success,” he said.

- The predictions that Trump alluded to in his speech are usually made using climate models. These computer programs are at the heart of climate research: they help scientists understand how the climate changed in the past, how it is changing now, and how it might change in the future.
- A climate model is a computer simulation that uses mathematical formulae and algorithms to replicate how the Earth’s climate system — including the atmosphere, ocean, land and ice — works.
- Climate models can forecast how variables such as temperature and humidity will change over time under different scenarios, like increased greenhouse gas emissions or changes in land use. Simply put, they allow scientists to test hypotheses and draw conclusions on past and future climate systems.
- Note that climate models are different from weather models. While weather models make predictions over specific areas and short time spans, climate models are broader and analyse long-term patterns.
- Researchers say that modern climate models are fairly accurate when it comes to capturing large-scale patterns and long-term changes, particularly at the global level.
- That said, current climate models are not perfect. This is because of imperfect, incomplete, or unavailable data on complex, dynamic processes such as the nature of clouds, the climatic effects of sudden geophysical events such as a volcanic eruption, or natural phenomena such as El Niño events.



- Climate models also overlook regional specifics such as intense rain in rural areas, flooding in urban areas, or heat in towns, as they view the Earth in broad sections, typically ranging from 100 to 250 kilometres (the size of each cell of the three-dimensional grid).
- The most glaring shortcoming of these models is that they tend to be less accurate in the Global South. This could be because of inadequate ground data, and more complex and poorly represented regional climate patterns, such as the Indian monsoon.
- These flaws, however, do not mean that climate models are useless. Since they are based on well-founded physical principles of Earth system processes, climate models are still one of the best ways to understand general climate patterns and make policy decisions to mitigate the adverse effects of climate change.
- As such, almost all climate models and climate scientists agree on one fundamental fact: that climate change is real, and the rise of the global mean surface temperatures is due to the continuing emission of heat-trapping greenhouse gases.

Do You Know:

- It was reported in May that the India Meteorological Department (IMD) will soon adopt the Bharat Forecast System (BFS) which offers the highest resolution among weather models. This move will significantly enhance the IMD's weather forecasting capabilities, especially with respect to extreme rainfall and cyclones.
- Developed by Pune-based Indian Institute of Tropical Meteorology (IITM), the BFS offers a spatial resolution of 6km x 6km, making it the first weather model with such high resolution. In fact, weather modellers have also been working to fine-tune this resolution to 3km and 1km.
- Currently, the IMD operates Coupled Forecasting System (CFS) developed under the Monsoon Mission Project. The original model framework of CFS was developed by US-based National Center for Environmental Prediction.
- For Indian use, it was modified to provide forecasts for the Indian monsoon region for different spatial and temporal resolutions. In addition, it also runs the Global Forecasting System (GFS), which a coupled model (factors in ocean and atmospheric parameters), for issuing the weather forecasts at time scales ranging from a few hours, to five days, a month to a season.

PHILIPPINES PIONEERS CORAL LARVAE CRYOBANK TO PROTECT THREATENED REEFS

Known as the “Amazon of the seas,” the Coral Triangle is a 5.7 million sq. km expanse across the tropical waters of Indonesia, Malaysia, Papua New Guinea, the Philippines, the Solomon Islands, and Timor-Leste — and the richest marine ecosystem on the earth.

The Triangle is home to more than three-quarters of the world's coral species, a third of all reef fish, vast mangrove forests, and six of seven marine turtle species. It also sustains the food security and livelihoods of more than 120 million people.

The Coral Triangle is also facing mounting dangers. Growing carbon emissions, destructive fishing, air, water, and soil pollution, and the accelerating effects of climate change are all driving



coral bleaching, habitat loss, and species decline, placing both biodiversity and coastal communities at grave risk.

Dangerously exposed

According to the Status of Coral Reefs of the World 2020 report, the planet lost 14% of its corals between 2009 and 2018. Scientists have warned that without drastic action to keep global warming to 1.5° C, 70-90% of live coral cover could be lost by 2050.

According to the UN Environment Programme, ocean temperatures may take decades to stabilise even under the most ambitious climate targets, leaving coral ecosystems dangerously exposed in the interim.

In one form of resistance against these threats, the Philippines is preparing to host Southeast Asia's first coral larvae cryobank to help restore and protect reefs.

Set up by the University of the Philippines Marine Science Institute, the facility will freeze and preserve coral larvae — the small, free swimming “seeds” of corals — at very low temperatures. These larvae can later be used to revive damaged reefs or for research, thus protecting genetic diversity that might otherwise be lost.

The project is part of a wider regional initiative that links research institutions in the Philippines, Taiwan, Indonesia, Malaysia, and Thailand to create a network of cryobanks across the Coral Triangle. Led by Chiahsin Lin of Taiwan's National Museum of Marine Biology and Aquarium and the National Dong Hwa University, the cryobank is supported by the Coral Research & Development Accelerator Platform through the Marine Environment and Resources Foundation, Inc.

A study published in *Frontiers* in 2023 described a technique called vitrification, where the larvae are exposed to special protective solutions before being plunged into liquid nitrogen at -196° C. The rapid freezing that ensues turns the larvae into a glass-like state, preventing the formation of ice crystals that would otherwise destroy them.

To revive the samples, scientists use an equally swift method using lasers, which thaw the larvae in a fraction of a second to avoid re-crystallisation. Once warmed, the larvae are gradually rehydrated in seawater and checked for signs of life, such as swimming and settling, before being transferred to tanks for further growth.

This breakthrough method ensures genetic material from corals can be safely stored for years and later used to help restore damaged reefs.

'No endangered species'

Cryobanks of coral symbionts — microscopic algae living inside corals — are crucial to reef survival. One is being set up at Phuket Rajabhat University under Dr. Thongpoo's leadership. Her team is working with cauliflower corals (*Pocillopora* sp.), chosen for their abundance and ability to recolonise heat-damaged reefs.

'Genetic insurance policy'

For now, the scale of reef loss is sobering. Dr. Lin warned that “in the near future, cryobanks may become museums for extinct coral species.”



For Dr. Thongpoo, on the other hand, the effort represents hope: “Cryopreservation is a genetic insurance policy for the future. We are essentially building a living seed bank of coral larvae and Symbiodiniaceae.”

Dr. Lin and Dr. Thongpoo also said that local communities which depend on the reefs for their livelihoods are often unaware of their value. In Southeast Asia, tourism, waste discharge, and destructive fishing have worsened reef decline. Without active community participation, they warned, conservation efforts alone won’t save corals.

With regional collaboration between scientists, governments, universities, and local communities, the project aims to strengthen resilience and secure the Coral Triangle’s reefs for generations to come.

COULD HIDDEN DENTAL BACTERIA HELP EXPLAIN SUDDEN AND DEADLY HEART ATTACKS?

A new study published in the Journal of the American Heart Association has found that viridans streptococci, a group of common oral bacteria, can form sticky bacterial layers called biofilms deep inside atherosclerotic plaques, remaining hidden from the immune system until the moment of rupture. The findings suggest that oral bacteria could persist in coronary arteries and contribute directly to fatal heart attacks.

Coronary artery disease has long been understood as a condition driven by cholesterol deposition, high blood pressure, diabetes, and smoking, all of which promote chronic inflammation in the arteries. Alongside these established factors, researchers have also proposed infection-related inflammation as a trigger for plaque rupture, leading to heart attacks. Previous studies had linked microbes related to pneumonia, herpes viruses, and ulcers inside atherosclerotic plaques, although none had been linked directly to rupture events.

“This study is a step forward in our understanding of the reasons for increased incidence of heart attacks in individuals with gum disease and the increased prevalence of gum disease in patients with heart attacks,” C.C. Kartha, ex-professor of eminence at the Rajiv Gandhi Centre for Biotechnology, Thiruvananthapuram, said.

Plaques and heart attacks

The new study, by a research team at Tampere University in Finland, examined coronary arteries from 121 sudden-death autopsies and 96 patients undergoing vascular surgery. Using DNA detection tests and microscopic staining, the researchers found bacterial DNA in a significant proportion of samples. Viridans streptococci were the most frequent species, present in about 42% of both autopsy and surgical cases.

The bacteria were seen forming biofilms within the lipid-rich cores of plaques, where immune cells called macrophages largely failed to notice them, suggesting they could persist silently for years. In ruptured plaques, however, the bacteria had shifted location into the outer layer that covers the plaque and prevents it from spilling into the bloodstream. Here, they were associated with the activation of toll-like receptor 2 (TLR2), an immune sensor that helps the body detect microbes. This pattern was consistent with inflammation leading up to rupture.

The team also took steps to rule laboratory contamination out. Lead author Pekka J. Karhunen explained that their controls showed no signal when unrelated bacteria were tested and that the same bacterial signatures were found in both autopsy and surgical cases.



The question now is whether these hidden bacteria can be treated. Attempts to treat coronary disease with antibiotics have repeatedly failed in large clinical trials, and the Finnish group suggested that biofilms may explain why. The bacteria embedded in these structures strongly resist both antibiotics and immune clearance.

Prof. Soma Guhathakurta, cardio-vascular and thoracic surgeon, and Honorary Advisor at Namar Heart Hospital, Chennai, said the oral bioburden could one day be measured in suspected high-risk individuals, who could be offered preventive penicillin treatment in a strategy modelled on the way doctors manage rheumatic fever. While this is speculative, such proposals show how the findings are already opening new lines of inquiry.

Oral health and heart risk

Dentists have long observed how bacteria in dental plaque can alternate between stable biofilms and free-floating, invasive forms. “Bacteria in dental biofilms can form robust communities that, under certain conditions, can disperse and release more virulent cells,” Delhi-based orthodontists Hiten and Priyanka Kaushal Kalra explained.

They said that such shifts are plausible in arteries as well as through microtears in the blood vessel lining, on prosthetic surfaces such as valves or stents, and the lipid-rich environment of plaques. When conditions change, dispersed free-floating cells can re-emerge and penetrate deeper tissues, like those seen in infective endocarditis, a serious infection of heart valves.

The Kalras pointed to population-level evidence linking oral care with cardiovascular health. “The ARIC study showed regular dental care was associated with a 23% lower stroke risk, while a large Korean cohort found more frequent tooth brushing linked to reduced cardiovascular events.” Untreated periodontal disease, apical periodontitis and chronic dental infections, by contrast, correlate with higher risks of stroke and coronary disease.

They emphasised early management of gum disease, prompt treatment of abscesses or necrotic teeth, and regular cleaning, alongside collaboration between dentists and cardiologists in high-risk patients.

Public health resonance

The insights from dentistry highlight the everyday routes by which bacteria could reach the arteries — a concern made sharper in India’s context. Cardiovascular disease affects people in India of younger ages even while untreated oral disease remains widespread.

“The oral-cardiac link is well known, though the causal link has not been established,” said Dr. Kartha. “It is important to educate the public regarding the mouth–heart connection and the importance of oral hygiene as well as detecting and treating gum disease early, especially in patients with risk factors such as high LDL and diabetes.”

Prof. Guhathakurta added that oral swab surveillance after the age of 40 could be one way to test the biofilm-heart link in community settings, if validated by further research.

The Finnish group is also extending its investigations. “We aim to publish our bacterial genetic sequencing findings on the whole microbiome of coronary atheromas in the near future,” said Dr. Karhunen. Looking further ahead, he added, “We also aim to study the possibility of developing a vaccine against bacterial biofilm formation and bacterial-induced clotting.”



These ideas reflect a broader effort to move beyond association and determine whether targeting hidden biofilms can alter the course of coronary disease.

For now, cardiology practice remains centred on cholesterol control, blood pressure management, and diabetes care. Yet the new findings and the voices of clinicians and dentists alike underline that oral health may be more closely tied to heart health than is recognised. Whether through everyday gum care or future biofilm-targeting therapies, the bacteria in our mouths could prove to be an overlooked player in the story of India's most common killer.

WHY WE NEED TO CHANGE THE WAY WE TALK ABOUT ANTIBIOTIC RESISTANCE

In 2010, India woke up to a scientific storm. A research paper published in *The Lancet Infectious Diseases* described a new enzyme that could make bacteria resistant to nearly all antibiotics, including our last-resort drugs. This enzyme was named New Delhi Metallo-beta-lactamase, or NDM. Overnight, the gene's name became a political issue. The Indian government argued it unfairly tarnished the nation's reputation, while the British researchers defended it as a standard naming practice. The media seized the story, politicians took positions, and for a short time, antimicrobial resistance (AMR) became front-page news.

This controversy, and the unbiased opinions of many who stated that AMR could push our country into a catastrophic health crisis if not urgently tackled, created a momentum that later paved the way for initiatives such as the Chennai Declaration. Those were years when strong, even frightening, predictions worked. They jolted decision-makers. They made headlines. They opened doors. But what worked in 2010 no longer works today.

For over a decade, we have repeated the same dire forecasts: 10 million deaths every year by 2050, one hundred trillion dollars lost to the global economy, a looming collapse of healthcare. These numbers, taken from the landmark report by British economist Lord Jim O'Neill, once carried weight. They reframed AMR as not just a medical problem, but also an economic and political one. Governments took notice. The G7 and G20 put AMR on their agenda. For a time, the message worked.

But repetition dulls impact. Psychologists call this habituation: the more you hear something, the less you respond. Psychologist Paul Slovic, who has studied how humans perceive risk, calls it psychic numbing: the bigger the numbers, the less we feel. A single patient's suffering moves us; 10 million deaths become an abstraction. As journalist Paul Brodeur wrote, "Statistics are human beings with the tears wiped off." In talking about AMR only in statistics and distant futures, we have wiped off the tears and lost the human connection.

Today, the media is tired of AMR stories. Policymakers are distracted by other crises. Even doctors are weary of hearing the same warnings at conferences. Among the public, AMR barely registers.

This is not because resistance is less dangerous than before. If anything, the problem is worse. The real crisis is that our words no longer move people. AMR has become, above all, a communication crisis.

Making it personal

If the language of catastrophe no longer works, what can? The answer lies in making the story personal. Instead of talking only about the future collapse of healthcare systems, we must talk about the present impact on individual bodies. The focus must shift from statistics to biology.



The human body is not just human. It is microbial. Trillions of bacteria, viruses, and fungi live in and on us, shaping our health in ways we are only beginning to understand. This community, called the microbiome, helps digest food, produces vitamins, trains immunity, and protects our skin. It even communicates with our brain, influencing mood and cognition.

Antibiotics, while life-saving, are not neutral. Even a single dose can disrupt the microbiome for months. In some cases, the balance never fully recovers. The consequences ripple through what scientists call the “axes” of communication between the gut and the rest of the body. Disturbances in the gut microbiome affect the brain, worsening anxiety or depression. They affect the lungs, increasing the risk of asthma and severe respiratory infections. They alter metabolism, raising the likelihood of obesity and diabetes. They influence the skin, aggravating conditions like eczema or acne. They reshape the immune system, making allergies and autoimmune diseases more common. These are not distant predictions for 2050. These are impacts on us, on our children, today. For too long, we have told only the story of the bad bugs — the resistant pathogens that kill. But there is another story we must tell: the story of the good bugs. And one of the most surprising, even delightful, examples of their role comes from something as ordinary as perfume.

Why does the same perfume smell different on different people? Perfumers usually say it is because of differences in skin chemistry, in pH or moisture or oiliness. But research is showing another dimension: the microbes on our skin. Bacteria on the skin produce enzymes that interact with fragrance molecules. These enzymes break some molecules down, amplify others, and sometimes even create new scents. That is why a floral perfume may smell fresh on one person but heavy on another. Or why a woody note lingers on one wrist but fades quickly on another. It is not only the perfume; it is the partnership between fragrance molecules and bacterial enzymes on the skin.

This is a reminder that microbes are not only about disease. They are about individuality, diversity, and beauty. They shape our daily experiences in invisible ways. Bugs are not just enemies. They are part of who we are.

So if we can tell such positive, fascinating stories about microbes, why can't we do the same for AMR? Instead of only warning that antibiotics cause resistance in society, we can say: antibiotics can harm your microbiome. Protect your good bugs — they protect you. This is not a softer message. It is a more effective one, because it connects to people's own lives. It replaces dread with responsibility. It offers hope.

Shifting the story

This is the shift we need. From resistance in hospitals to resilience in the body. From global catastrophe to personal consciousness. From fear to fragrance. From the language of war to the language of wisdom.

The good, the bad, and the ugly bugs all live with us. The question is: how will we tell their story? If we continue with pessimism alone, people will turn away. If we change our language, if we bring in positivity, biology, and human connection, we can keep AMR on the agenda — not as an abstract threat, but as a living, urgent, and solvable challenge.

'ARTIFICIAL LIGHT EXPOSURE LEADS TO EARLY DEMENTIA SYMPTOMS'

A study by researchers at Delhi University (DU) shows how light pollution disrupts sleep and speeds up neurodegeneration.

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- Findings of the study have been published in the international neuroscience journal 'Neurochemistry International'. Prof Sarkar said their findings suggest managing sleep properly could significantly delay or reduce the impact of these debilitating diseases, highlighting the importance of sleep for brain health.
- Dementia and other age-related brain disorders have become a major global health challenge with Alzheimer's disease alone responsible for over three-quarters of all cases among older adults worldwide. In India, the number of people living with dementia is expected to surge to around 14.3 million by 2050, according to studies.
- The study found that disrupted sleep, triggered by continuous exposure to artificial light or "light pollution", can hasten the early onset and worsen the severity of dementia-related symptoms.
- According to Prof Sarkar, these findings shed new light on how modern lifestyles, especially in brightly lit urban environments, may be quietly undermining brain health.
- But in today's world, where city lights never dim and screens glow late into the night, the brain's delicate balance is being disrupted. This constant exposure to artificial illumination, they warn, is taking a hidden toll, particularly on people already vulnerable to neurodegenerative conditions such as Alzheimer's and Parkinson's disease.
- In their study, researchers Prerna Aggarwal, Virender and Prof Sarkar used genetically engineered fruit flies (*Drosophila melanogaster*) carrying the human form of the toxic tau protein, a hallmark of Alzheimer's disease.
- The team discovered that when these flies were exposed to continuous artificial light, disrupting their normal sleep patterns, their brain cells degenerated much faster. The flies showed early signs of movement difficulties and clear structural damage in brain regions that control memory, learning and sleep.
- Researchers found that unhealthy light exposure acted like an accelerator pedal for tau-related disease. It significantly increased the stickiness of the tau protein, promoting the formation of large, toxic clumps that choke neurons at a much faster rate.
- Although abnormal light exposure has long been linked to disrupted circadian rhythms and disturbed sleep-wake cycles, the latest study points to its possible role in worsening the molecular and cellular changes that drive neurodegeneration.
- The researchers, however, said more research is needed to fully understand how light pollution intensifies disease progression at the cellular level. "From night-shift workers and late-night students to anyone scrolling endlessly through their phones, many of us are now living under near-constant artificial light," Prof Sarkar cautioned.

Do You Know:

- Light pollution is the human-made alteration of outdoor light levels from those occurring naturally.
- When we over-light, fail to use timers and sensors, or use the wrong color of light, we can negatively affect many parts of our world, including migratory birds, pollinators, sea turtles, and mammals, including humans.



- Alzheimer's is the most common type of dementia, an umbrella term for a range of conditions that involve the loss of cognitive functioning. It involves the formation of plaques and tangles in the brain, and the accelerated aging of certain neurons concerned with storage and processing of memory.
- According to WHO estimates from 2023, more than 55 million people suffer from dementia worldwide, with Alzheimer's contributing to around 75% of these cases. Anywhere between 3 and 9 million Indians are believed to suffer from the disease, a number that is set to grow as India's population ages.



DreamIAS