

# CURRENT AFFAIRS for UPSC

23TH FEBRUARY TO 1ST MARCH 2025

# DREAMIAS



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## INTERNATIONAL

### WRITING ON WORLD AFFAIRS FROM THE GLOBAL SOUTH

In a recent edition of *The Economist*, the Foreign Minister of Oman, Badr Albusaidi, wrote an evocative article criticising the U.S. and Israel's rash actions in launching unlawful military strikes against Iran. He lamented how Iran's retaliation against Israel and U.S. targets in neighbouring territory, while "deeply regrettable and completely unacceptable", was "probably the only rational option available to [its] leadership", and how the war had threatened West Asia's "present security and future prosperity". This was a remarkable article by an Omani official who played a role in mediating nuclear talks between the U.S. and Iran, before the attacks plunged the world into a new crisis. Mr. Albusaidi's lament was a call to end the madness of the war even as sites in Oman were hit in Iran's retaliatory strikes.

Yet in the same issue of *The Economist*, an unsigned article on U.S. actions in cutting off Cuba's fuel imports struck a very different tone — quite an endorsement of Washington's actions, it argued that since the Trump administration is "in a position to negotiate an opening up [of Cuba's economy]", it should "enforce compliance to a far greater extent". The publication urged the U.S. to seize shadow fleet tankers used by the socialist island nation, demand political liberalisation, and keep sanctions in place "with licences being used to allow investment".

The journal had little to say about how the U.S. has asphyxiated Cuba's economy which led to three nationwide electric grid shutdowns this month alone, exacerbated a food crisis and made millions of lives miserable. Anything seems kosher against a government that is avowedly socialist, poses no threat to the U.S., but is still ludicrously marked by Washington as a "sponsor of terror".

*The Economist's* view on Cuba stands in sharp contrast to how it denounced the U.S.'s designs on Greenland, calling it "dangerous nonsense" that could weaken the post-war international order. That order, it would appear, deserves defending only when it protects European sovereignty, not when it pertains to Cuba's economy or Venezuela's self-determination.

This double standard is not new. In the run-up to the 2003 Iraq invasion, *The New York Times* carried Judith Miller's explosive but fabricated accounts of Saddam Hussein's weapons programmes; Bush administration officials cited the *Times's* reporting as independent validation of their war cause. The paper's belated apology in 2004 admitted its coverage had not been "as rigorous as it should have been". By then, Iraq lay in ruins. More recently, *The Washington Post's* editorial board hailed the Trump administration's military seizure of Venezuela's sitting president as "a major victory for American interests", even as Mr. Trump declared the U.S. would "run" the country and its oil.

Editorial writers in the Global South must recognise this hypocrisy, despite the constraints we face. We depend a lot on Western reporting when it comes to world affairs, as this is, many a time, the only available source to understand events in distant hemispheres where we do not have correspondents. Publications cited above have dozens of reporters and bureaus spanning the globe while most newspapers in Asia, Africa and Latin America barely have any in other regions. The editorial writer's dependence must be qualified with the ability to read accounts in the Western press critically, extracting only the reportable substance while discarding the imperial frame of reference.



Our task is also to be critical of anti-democratic impulses in our own backyards as much as elsewhere, while taking firm positions against the assertion that sovereignty is a privilege only for the powerful. Governments in the Global South derive their legitimacy through diverse ways, some through liberal-democratic mandates, and others through genuine revolutionary histories; that legitimacy is not for Washington or London to adjudicate on.

#### KILLING IRAN'S LEADERS IS FRAUGHT AND ESCALATORY

AS the war launched by the US and Israel on Iran enters its third week, the killing of Ali Larijani, secretary of Iran's Supreme National Security Council, by Israel and the strikes on South Pars, part of the world's largest gasfield, mark an escalation both rapid and perilous. Larijani's killing is another damaging blow to the regime after the killing of Ayatollah Ali Khamenei on the war's first day. Together with the killing of Basij commander Gholamreza Soleimani, this decapitation strategy is one Israeli PM Benjamin Netanyahu believes could create the conditions for a popular uprising in Iran. On the evidence so far, the targeting of high-ranking leaders, one by one, has done little to rally the Iran street — instead, it could have shrunk the space for any diplomatic spadework that will, inevitably, have to follow the conflict once the pieces need to be picked up.

History is replete with attempts at regime change that led to instability and chaos, leaving power vacuums for armed groups to exploit. In the case of Iran, however, that may not necessarily be a downside for Israel. Unlike the US, which has extensive economic and defence ties with Gulf states, Israel's leadership may well view a prolonged war and an unstable Iran as favourable outcomes, not least in an election year for Netanyahu. The resignation letter of Joe Kent, director of the National Counterterrorism Centre, says the US "started this war due to pressure from Israel and its powerful American lobby". This has come amid continuing lack of clarity in President Donald Trump's war aims and claims. Despite Trump's efforts to draw NATO into the conflict by pressing allies to deploy warships to open up the Strait of Hormuz, countries across Europe, as well as Japan, Australia, and Canada, have held firm in their refusal, leaving the US largely isolated, alongside Israel. US allies are justified in being cautious against joining a war they never supported.

India's energy security depends heavily on the Gulf and the uninterrupted flow of traffic through the Strait of Hormuz. Nearly 1 crore Indian citizens live and work in the region, making both their welfare and the flow of remittances vital national interests. India has done well to keep all lines of communication open. Delhi's understated diplomacy is beginning to show results: Last weekend, two Indian-flagged LPG carriers crossed the Strait. Undoubtedly, India and Israel share a growing, close strategic partnership that has strengthened in recent years. But Delhi must remain alert to the rapid escalation as it risks moving towards a point where Indian and Israeli interests begin to diverge.

#### FIRST OP USE OF IRBMS BY TEHRAN, WAY BEYOND WEST ASIA THEATRE OF WAR

Iran's bid to target Diego Garcia, a joint US-UK military base in the Indian Ocean, with ballistic missiles has made the world sit up. Because Diego Garcia is 4,000 km away from the Iranian mainland.

— While neither of the two ballistic missiles reached the island — one was said to have failed mid-flight and the second was targeted by an SM-3 interceptor launched from a US Navy warship — this was the first time that Iran had disclosed and deployed intermediate-range ballistic missiles.



— The IRBMs, with a range of 3,000-5,500 km, bridge the gap between medium-range ballistic missiles (MRBMs with a range of 1,000-3,000 km) and intercontinental ballistic missiles (ICBMs with a range exceeding 5,500 km).

— That Tehran, which has been launching MRBMs from its arsenal to reach targets in Israel, chose to strike Diego Garcia, home to US strategic bombers, demonstrated its ability to strike beyond West Asia and hurt US interests.

— Until now, it had limited its ballistic missile range to 2,000 km to reach its adversaries in the region. But the attempt to hit Diego Garcia confirmed suspicions of IRBMs in its arsenal. Western analysts have long pointed to Iran's space programme, and warned it could develop and deploy IRBMs, even ICBMs.

— Diego Garcia lies in the central Indian Ocean, south of India and southwest of Sri Lanka. It is the largest island in the Chagos Archipelago and one of only two critical US bomber bases in the Indo-Pacific region, the other being Andersen Air Force Base in Guam. The base hosts bombers, nuclear submarines, and guided-missile destroyers.

— Diego Garcia sits approximately 3,000 km from both the Bab-el-Mandeb Strait at the mouth of the Red Sea and the Malacca Strait near the South China Sea. This strategic location allows long-range bombers to reach the two critical maritime chokepoints. The base is also critical to US Space Force tracking infrastructure.

— Numerous air operations were launched from Diego Garcia during the Persian Gulf War in 1990-91, US-led strikes on Afghanistan in 2001, and the initial phase of the Iraq War in 2003.

— After the Iranian Revolution in 1979 dramatically destabilised West Asia, Diego Garcia underwent the biggest expansion of any US military site since Vietnam. The harbour was deepened to accommodate aircraft carriers; a 12,000-foot runway was built for B-1, B-2, and B-52 bombers; and massive pre-positioned ships, each roughly 1000 m, were loaded with enough weapons and supplies for an entire Marine brigade. Other advanced weaponry is also housed on the island.

— Last month, Iranian Foreign Minister Abbas Araghchi had claimed that Tehran had deliberately limited its missile range to 2,000 km as its weapons programme was "strictly defensive" in nature. However, Friday's launches effectively debunk that claim.

— Iran launched the missiles just hours after UK Prime Minister Keir Starmer gave the US permission to use the joint UK-US base to target a new set of Tehran's missile sites, as part of 'Operation Epic Fury'.

— The UK has not participated militarily in the Iran strikes, deploying aircraft only in a defensive role. Starmer specifically authorised the use of Diego Garcia only to strike missile sites that could threaten ships in the Strait of Hormuz. That narrow authorisation may be impossible to maintain as the conflict escalates.

— The UK granted the US a 50-year lease in 1966 for a major military facility, extended in 2016 for another 20 years. This extension was set to expire in 2036 before a 2025 sovereignty agreement with Mauritius was finalised.

— In 2019, the International Court of Justice ruled that the UK's original separation of the Chagos Archipelago from Mauritius had been illegal and recommended that the islands be returned.



— A resolution of sorts came in May 2025 when UK PM Keir Starmer signed a formal agreement transferring sovereignty of the Chagos Islands to Mauritius, with Diego Garcia immediately leased back to the UK for the next 99 years for £101 million a year.

— President Donald Trump said the US was considering “winding down” its military operation against Iran, as Iran and Israel traded attacks Saturday and Iranian media said the nuclear enrichment facility in Natanz had been attacked.

— Iran fired two ballistic missiles towards the US-British military airport on the island of Diego Garcia, 3,800 km away in the Indian Ocean, but did not hit the base, the Wall Street Journal reported.

— A source at Britain’s defence ministry said the attack had occurred before the government gave specific authorisation Friday for the US to use British military bases to carry out strikes on Iranian missile sites.

— As the fighting continued, Iranian media said US-Israeli forces had attacked the Shahid Ahmadi-Roshan Natanz enrichment complex Saturday morning.

— Technical experts found that no radioactive leaks had occurred and nearby residents were not at risk. Israel said it was unaware of such a strike, while the head of the International Atomic Energy Agency (IAEA) said it was investigating.

**Do You Know:**

— The Chagos archipelago comprises more than 60 low-lying islands in the Indian Ocean roughly 1,600 km to the northeast of the main island of Mauritius. Chagos has a land area of only 56.1 sq km, with Diego Garcia alone spread over 32.5 sq km — which is about the same as the land area of Lakshadweep.

## IN BRITAIN, CHURCHILL OUT, BADGER IN

There is something apt about the suggestion that a badger might displace Winston Churchill from Britain’s banknotes. The Bank of England’s proposed shift from historical figures to wildlife in its next series of banknotes has been framed as a design refresh, a nod to biodiversity, a modernisation exercise against the threat of counterfeiting. Yet, it can also be read as a cultural recalibration. For decades, banknotes have elevated a series of eminent figures into a gallery of saints. But the selection has not been without criticism: Non-inclusion of racial or ethnic minorities and a conspicuous absence of women — Queen Elizabeth II and Jane Austen notwithstanding — have raised questions about the narrowness of the pantheon. What the presence of a kingfisher or a badger might force is a reckoning with all that is lost through a myopic engagement with history.

Historical figures have, in recent years, come under a more exacting gaze, their certainties eroded by scrutiny. Churchill remains a notable example. Racial attitudes and the broader ramifications of the Empire have complicated what was once a singular narrative of greatness. His government’s role in the Bengal Famine of 1943, in which nearly 3 million people perished, has come under increasing criticism. Elsewhere, too, the afterlife of the Empire has become harder to ignore. A 2015 movement in South Africa led to the removal of the statue of British mining magnate and politician Cecil Rhodes from the University of Cape Town campus. These episodes highlight that



history is dynamic, its study requiring continued accommodation of new evidence and long-marginalised voices.

Against this backdrop, wildlife allows the imagination to rest on a shared inheritance that is less contested and more capacious. Even the grandest narrative, after all, benefits from a little space to breathe.

## CUBAN SORROW

Even as the world is feeling the pinch of the ill-thought-out and cruel attacks by the United States and its West Asian loose-cannon ally, Israel, on Iran, an equally heinous imperial act is under way in the Caribbean, drawing little attention. The Trump administration has effectively blockaded Cuba's fuel supplies to pressure regime change. In actions taken since December 2025, interdicting Venezuelan oil shipments, threatening punitive tariffs on any country supplying fuel and deterring Russian diesel and crude oil supplies, the U.S. has strangled a petroleum-dependent country, where oil drives 83% of power generation. The consequences have been devastating. There have been three grid collapses in March 2026, even as garbage is piling up in Havana and other cities, perishable food is rotting, and industry and government offices have shut. Donald Trump's actions are criminally illegal by international law. He claims that Cuba is "seeing the end", boasts that he will have the "honour" of "taking" Cuba, and has called on the Cuban government to "make a deal before it's too late", without specifying any terms.

The actions against Cuba must be seen against a six-decade long U.S. embargo — but what Cubans term a blockade — ever since the revolution nationalised U.S.-owned enterprises in the early 1960s. The U.S.'s trade embargo in 1962 was progressively strengthened as the Helms-Burton Act of 1996 effectively conscripted the global business community into enforcing it. Meanwhile, Cuba's designation as a state sponsor of terrorism — removed by Barack Obama but restored by Mr. Trump and lacking any rational basis — has cut the country off from international banking. That these coercive measures persisted much after the Cold War reveals that their true purpose is not U.S. national security, but the appeasement of the right-wing Cuban-American community in Florida, led by U.S. Secretary of State Marco Rubio, son of Cuban émigrés, for whom regime change in Havana is a lifelong ambition. Mr. Trump's military intervention in Venezuela, including capturing a sitting President and seizing control of its oil, was itself partly designed to sever Cuba's primary fuel lifeline under the doctors-for-fuel arrangement. The pattern is clear: impunity in Venezuela emboldened the Trump administration to asphyxiate Cuba and impunity in Cuba has accompanied America's war on Iran. Each unchallenged act of imperial overreach normalises the next, threatening not just vulnerable nations in the U.S. orbit but also the very framework of international order. The world, including India, must not remain silent and have the gumption to condemn these actions and provide humanitarian assistance, under the aegis of the United Nations, for the people of Cuba.

## CHINA MAPS THE OCEAN FLOOR AS IT PREPARES FOR SUBMARINE WARFARE WITH U.S.

China is conducting a vast undersea mapping and monitoring operation across the Pacific, Indian and Arctic oceans, building detailed knowledge of marine conditions that naval experts say would be crucial for waging submarine warfare against the United States and its allies.

In one example, the *Dong Fang Hong 3*, a research vessel operated by Ocean University of China, spent 2024 and 2025 sailing back and forth in the seas near Taiwan and the U.S. stronghold of Guam, and around strategic stretches of the Indian Ocean, ship-tracking data reviewed

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



by *Reuters* shows. In October 2024, it checked on a set of powerful Chinese ocean sensors capable of identifying undersea objects near Japan, according to Ocean University, and visited the same area again last May. And in March 2025, it criss-crossed the waters between Sri Lanka and Indonesia, covering approaches to the Malacca Strait, a critical chokepoint for maritime commerce.

According to the university, the ship was carrying out mud surveys and climate research. But a scientific paper co-written by Ocean University academics shows it has also conducted extensive deep-sea mapping. Naval-warfare experts and U.S. Navy officials say the type of deep-sea data being collected by the *Dong Fang Hong 3* – via mapping and placement of sensors in the ocean – is giving China a picture of the subsea conditions it would need to deploy its submarines more effectively and hunt down those of its adversaries.

The *Dong Fang Hong 3* isn't operating alone. It is part of a broader ocean mapping and monitoring operation involving dozens of research vessels and hundreds of sensors. In tracing this effort, *Reuters* examined Chinese government and university records, including journal articles and scientific studies, and analysed more than five years of movement by 42 research vessels active in the Pacific, Indian or Arctic oceans using a ship-tracking platform built by New Zealand company Starboard Maritime Intelligence.

While the research has civilian purposes – some of the surveying covers fishing grounds or areas where China has mineral prospecting contracts – it also serves a military one, according to nine naval-warfare experts who reviewed *Reuters*' findings. To gather information about underwater terrain, research vessels map the sea floor while travelling back and forth in tight lines. The tracking data shows that type of movement by the vessels *Reuters* tracked across large sections of the Pacific, Indian and Arctic oceans.

At least eight of the vessels *Reuters* tracked have conducted seabed mapping, while another 10 have carried equipment used for mapping, according to a review of Chinese state media articles, vessel descriptions published by Chinese universities, and press releases by government organisations. The vessels' survey data "would be potentially invaluable in preparation of the battlespace" for Chinese submarines, said Peter Scott, a former chief of Australia's submarine force. "Any military submariner worth his salt will put a great deal of effort into understanding the environment he's operating in."

The ship-tracking data show that China's seabed-surveying effort is focused in part on militarily important waters around the Philippines, near Guam and Hawaii, and near U.S. military facilities on Wake atoll in the north Pacific.

"The scale of what they're doing is about more than just resources," said Jennifer Parker, an adjunct professor of defence and security at the University of Western Australia and former Australian anti-submarine warfare officer. "If you look at the sheer extent of it, it's very clear that they intend to have an expeditionary blue-water naval capability that also is built around submarine operations."

In testimony to a congressional commission this month, Rear Admiral Mike Brookes, the commander of the U.S. Office of Naval Intelligence, said China had dramatically expanded its surveying efforts, providing data that "enables submarine navigation, concealment, and positioning of seabed sensors or weapons". He added that "potential military intelligence collection" by Chinese research vessels "represents a strategic concern". America recently overhauled its own efforts to map and monitor the ocean, but it typically does so with military



vessels that are allowed to turn off the tracking system monitored by civilian software. China's civilian survey ships also sometimes disable tracking, meaning its campaign may go further than *Reuters* could determine. This is the first time the extent of China's mapping and monitoring across the Pacific, Indian and Arctic oceans has been reported.

#### N KOREA, BELARUS LEADERS HOLD TALKS IN PYONGYANG, SIGN FRIENDSHIP TREATY

Belarus' President Alexander Lukashenko and North Korean leader Kim Jong Un held talks in North Korea's capital on Thursday and signed a friendship and cooperation treaty as the two Russian allies draw closer in the face of their confrontations with the U.S.-led West.

##### Key Takeaways:

- Lukashenko, who was in Pyongyang on a two-day official visit, hailed the document as "fundamental," and said that relations between the two countries are "entering a new stage," according to his press service. North Korea's official Korean Central News Agency said Friday that the leaders discussed boosting high-level cooperation and visits and exchanged their views on unspecified "international and regional issues of mutual concern."
- Chang Yoon-jeong, a spokesperson for South Korea's Unification Ministry, which handles affairs related to North Korea, said the meeting with Lukashenko aligns with Kim's foreign policy embracing the ideas of a "multipolar world order" and an "anti-West alliance." The countries could also be pursuing stronger three-way cooperation with Moscow, she said.
- Lukashenko, however, has also been improving relations with the Trump administration, which announced Thursday it had eased restrictions on a group of Belarus-linked financial and potash companies. The move comes as the war in the Middle East squeezes global fertilizer supplies and limits access for some U.S. farmers.

##### Do You Know:

- Belarus is a close ally of Russia. Lukashenko allowed Moscow to use Belarusian territory as a staging ground for the Kremlin's full-scale invasion of Ukraine in February 2022, and later authorized the deployment of Russian tactical nuclear weapons in Belarus.
- North Korea has also tilted his foreign policy toward Moscow in recent years, sending thousands of troops and large quantities of weapons to support Russian President Vladimir Putin's war in Ukraine while portraying the North as part of a united front against Washington.
- North Korea has suspended all meaningful dialogue with Washington and Seoul since the collapse of his second summit with U.S. President Donald Trump in 2019 over U.S.-led sanctions on the North. Kim's government has been rejecting dialogue offers by Trump after the American president entered his second term, and has called for Washington to drop the demands for North Korea's nuclear disarmament as a precondition for reviving talks.

#### IN NORTH KOREA, THE .07 PER CENT OPPOSITION

The city-state of Ankh-Morpork, the main setting for Terry Pratchett's Discworld novels, has a novel form of democracy: "One Man, One Vote. The Patrician [the ruler] was the Man; he had the Vote." It's a highly efficient system with zero chance of the elected government failing to live up to the electorate's expectations. The Democratic People's Republic of Korea has developed an equally



commendable model for parliamentary elections: In each constituency, the public gets to vote for the sole candidate. The system is liberal enough to accommodate dissent — one may cross out the name on the ballot. NOTA fans, please clap. Or else.

In an election held on March 15, the Workers' Party of Korea won all 687 seats in the Supreme People's Assembly, but only 99.93 per cent of the vote, down from 99.99 per cent in 2019. Much has been made of this drastic decline in vote share — are some brave souls raising their heads above the parapet? More likely, it's because 99.93, in some small way, looks more convincing than 100. Other dictatorships allow the "tolerated opposition" to even bag a few seats for much the same reason.

The rituals of democracy tend to enjoy a pantomime existence even when irrelevant; the Supreme People's Assembly is a case in point. As in Ankh-Morpork, there is really only one voter in North Korea. And, as the internet has just discovered, he is not only a "little rocket man" — as dubbed by a big rocket man — but also a girl dad. He deserves 100 per cent of the vote.

#### PATH AHEAD FOR NEPAL'S NEW LEADERSHIP

In the noisy, crowded landscape of Nepali politics, the rise of Prime Minister-designate Balendra Shah and his party, the Rastriya Swatantra Party (RSP), represents a rare political anomaly. While veterans of the 2008 republic traded barbs, the rapper-engineer-turned-mayor bypassed traditional campaigning for a "monastic" silence. His victory in Nepal's post-Gen Z parliamentary election on March 5 secured a historic mandate for an alternative force he joined a mere six weeks before the polls. Throughout the campaign, Shah spoke for barely thirty minutes, avoided media interviews and notably never once asked for a vote.

His unapologetic critiques of the political establishment during his tenure as Kathmandu's mayor, mirrored a generation exhausted by stale ideological party politics. In a nation with a median age of twenty-five, Shah's reputation as a disciplined, clean reformist promising better governance became a viral mandate. His calculated silence mirrored these frustrations, positioning him as the ultimate outsider for an electorate eager for results.

#### Beyond domestic politics

While capitalising on domestic old-guard fatigue served Shah as a winning electoral strategy, Nepal's hard geopolitical reality remains stubbornly unchanged. In Nepal, political shifts rarely remain purely domestic, often prompting debates about foreign influence given its geography wedged between the rivalries of India and China.

Yet, Shah, however has sought to counter this by projecting an image of a staunch nationalist. As mayor, his symbolism was deliberate: hanging a "Greater Nepal" map in his office as a direct retort to the "Akhand Bharat" mural in India's new Parliament House, and briefly banning Indian films. Simultaneously, he signaled caution toward Beijing by dropping a China-backed industrial park from his election manifesto. By distancing himself from large-scale geopolitical projects, Shah reframed the narrative, asserting a sovereignty that felt local, visible, and unapologetically independent.

#### Balancing ties with India and China

Historically, Nepal's politics followed rigid ideological scripts. The Nepali Congress, the country's oldest liberal force, leaned toward Delhi, while communist factions like CPN- UML maintained



proactive affinities with Beijing. And at times, the ideological rhetoric from Kathmandu stretched far beyond the Himalayas, from debates over Venezuela's regime change to contentious political statements on the Ukraine war, issues largely peripheral to Nepal's own priorities. Under Shah, this era of predictable ideological signaling may finally be fading. His minimalist approach and by speaking less about the world's ideological battles, Shah's personality itself can be potent strategic asset to Nepal, but it is immediately replaced by a different kind of geopolitical pressure that needs sustained diplomatic communique.

India remains Nepal's most consequential partner, linked by an open border, "Roti-Beti" social bonds, and accounting for a significant share of its trade, supplying virtually all of its petroleum, and emerging as the primary market for Nepal's burgeoning hydropower exports. Meanwhile, China has deepened its footprint through major infrastructure financing, such as \$216 million Pokhara International Airport. Intended as a regional gateway, its underutilisation is viewed in Kathmandu as a casualty of the broader India-China friction, particularly New Delhi's hesitancy to facilitate air routes for Chinese-financed infrastructure.

This is perhaps inaugural diplomatic crucible for Balendra Shah. Having invested heavily, Nepal cannot afford for such massive infrastructure to remain a "white elephant." The "monastic" outsider must now navigate a landscape where India is indispensable and China is influential. Meanwhile, Washington has pivoted from an aid partner to a high-stakes strategic interest partner, with recent post-election congratulations explicitly hinting at "shared security goals."

But the first "baptism by fire" for the Shah administration may well lie in the volatile West Asia. With millions of Nepalese migrants' lives and critical energy lifelines tied to the Persian Gulf caught in an escalating US-Israel-Iran War, India's logistical depth as a regional first responder offers an indispensable synergy for contingency planning to Kathmandu. This is where Balen's nationalist doctrine must meet the hard reality of strategic pragmatism. The new leadership remains untested in conventional diplomacy.

#### **An opportunity for India**

This moment offers a rare opening for New Delhi to recalibrate. India must move past the coercive shadow of the 2015 blockade and what is widely perceived in Kathmandu as outdated impulse for political micromanagement. New Delhi must recognise this transition as a new opening for modern partnership that respects the domestic rise of 'Nepal First' politics. Shah's mandate mirrors India's own tectonic shift in 2014; in Shah, Nepal has found its "strongman" archetype, a leader whose personal charisma and promise of technocratic reform have dismantled a decades-old establishment.

In the end, Nepal's geopolitical reality remains unchanged even as its politics transform at home. India's proximity will always matter most, China's influence will remain structural reality, and world powers like the U.S. will continue to pursue its strategic interests with renewed rigor. Ultimately, Nepal's voters were not adjudicating between global strategies, but seeking domestic renewal. For Balendra Shah and the RSP, bashing the "old guard" is a potent domestic strategy, but it carries zero currency in the cold-eyed theatre of international relations.



## NATIONAL

### NEPAL'S POLITICAL SHIFT OPENS A STRATEGIC WINDOW FOR INDIA

The election results in Nepal have been described as a political earthquake. There has been an emphatic and comprehensive rejection of old leaders and established parties. A younger generation of professionals and tech savvy figures, enjoying the support of Gen Z activists is set to take over.

#### Challenges ahead

By giving the Rastriya Swatantra Party (RSP) a two thirds majority, Nepali voters have granted Balendra Shah and his government, a powerful mandate for Nepal's complete transformation. It now has a huge responsibility to answer wide-ranging expectations--enough jobs for the youth, reversing the migration for work abroad, stimulate economic growth, and ensure good governance. It needs to be noted, however, that while voters have demonstrated their impatience with the old order and its decades- old insensitivity to their aspirations, this is not a positive vote for a clear-cut new agenda for reform, political or economic, since it was never spelt out and placed before them.

There is a real possibility of frustration and disillusionment that the new government will have to deal with as it settles down. The first warning shots were fired by the caretaker Prime Minister Sushil Karki even before the election, when she reminded the political class that the agitations of September 2025 had erupted because of the frustrations of people insisting on good governance, and a recurrence was inevitable if the situation lapsed into the same old pattern.

Hopefully the people of Nepal will give the new leaders enough time to address the country's problems.

#### Restructuring India-Nepal ties

For now, Nepal deserves every encouragement possible. India has been quick to extend it, without being loud or patronising. India has not been an issue during the election campaign. Its relationship with Nepal in recent years has focused on the right priorities — development, infrastructure, digital connectivity, energy. It has played its cards well and can continue to capitalise on the existing goodwill as the new leaders in Nepal seek to respond to development needs of the people.

Restructuring of the India-Nepal relationship has been long overdue. For far too long it has been trapped in the shadows of the legacy of British India days. Hopefully India and Nepal will seize every opportunity to fashion a forward- looking relationship based on today's realities and the immense potential for expanding cooperation. For this it will be necessary for policy makers on both sides to discard old mindsets, address long standing irritants with fresh approaches, and prioritise people-centric policies which can be delivered to keep pace with people's expectations and needs.

India also needs to look at the recent developments in Nepal as part of a wider regional phenomenon since happenings in Bangladesh, Sri Lanka and elsewhere also fall into the same pattern—agitations led by frustrated youth incidentally toppling pro-India political figures, demanding faster development and better governance. Labelling new political leaders being thrown up everywhere as anti-India just because of the legacies of the past does not seem justified,



as seen from the pragmatic readiness shown in Bangladesh and Sri Lanka to cooperate with India, by parties and leaders once seen as unfriendly.

Nepal could be a good partner for India in the evolving geopolitical scenario, if both countries try seriously to fashion a clear cut sub- regional strategy for rapid growth.

## UK COURT REJECTS NIRAV MODI'S PLEA TO REOPEN PROCEEDINGS AGAINST HIS EXTRADITION ORDER

THE HIGH Court of Justice, King's Bench Division, in London on Wednesday dismissed fugitive diamantaire Nirav Modi's petition seeking to reopen proceedings against his extradition order to India, marking another step toward his return to face charges in the Rs 6,498-crore Punjab National Bank (PNB) fraud case.

### Key Takeaways:

- According to the central agency, it has been seeking the extradition of Nirav Modi in connection with the PNB scam, with proceedings ongoing since 2018. "Following his arrest in the UK in 2019, courts approved his extradition and rejected earlier appeals, finding no legal barriers and accepting assurances regarding his treatment in India. Although a temporary legal obstacle delayed the process, it was lifted in August 2025," the spokesperson said.
- Nirav Modi was declared a fugitive economic offender in 2019.
- Along with his uncle Mehul Choksi, Nirav Modi is wanted by the CBI and the Enforcement Directorate for cheating the PNB using fraudulent Letters of Undertaking (LoUs). Last month, the Belgium government had confirmed that Choksi, 65, was arrested in Antwerp following an extradition request by Indian investigation agencies.

### Do You Know:

- Extradition is the formal process of one country surrendering an individual to another country for prosecution or punishment for crimes committed in the requesting country's jurisdiction. It is typically governed by a bilateral treaty between the two countries involved, or a larger multilateral treaty. Indeed it is extremely rare for an individual to be extradited without a treaty; even in the presence of treaties, extraditions are often contentious, long-drawn processes.
- According to the website of the Ministry of External Affairs, India has extradition treaties in force with 48 countries, and non-binding extradition arrangements with another 12.
- While the specifics differ from treaty to treaty, the process usually begins with the country in whose jurisdiction the offence has been committed making an official request for an individual's extradition.
- At the end of the day, most extradition treaties allow countries enough leeway to reject extradition requests in almost all cases. This means that extraditions end up being political and diplomatic issues rather than matters of legalese.

## WHEN THE CHIEF JUSTICE STEPS AWAY

On March 20, Chief Justice of India Surya Kant stepped away from hearing a batch of petitions challenging the Chief Election Commissioner and Other Election Commissioners (Appointment,

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



Conditions of Service and Term of Office) Act, 2023. The legislation replaced the Chief Justice of India with a Union Minister, on the selection panel for appointing the Chief Election Commissioner and other Election Commissioners, superseding the Supreme Court's 2023 interim arrangement. "I will be accused of conflict of interest," the CJI remarked before directing that the case be listed on April 7 before a bench comprising judges not in the line of succession to the office of the Chief Justice. While the order directs the Registry to list the case before a Bench to be earmarked separately by the Chief Justice of India, his oral remarks while hearing the case, *Dr. Jaya Thakur v. Union of India* (2024), raises questions that will linger long after the Bench is constituted. CJI Surya Kant is the second CJI to recuse from hearing the case. Earlier, CJI Sanjiv Khanna recused from hearing the same case in 2024.

### The doctrine and its foundations

Recusal flows from one of the oldest maxims of natural justice: *nemo iudex in causa sua* — no one shall be a judge in their own cause. In its modern form, the Supreme Court has moved from strict automatic disqualification for pecuniary interest, as in *Manak Lal v. Dr. Prem Chand* (1957), toward a standard of real likelihood of bias. *Ranjit Thakur v. Union of India* (1987) refined this further, holding that a reasonable apprehension of bias, and not merely a remote possibility, justifies withdrawal.

Every court to have addressed the question has held that the decision to recuse, rests on the judge's own conscience. No party can compel it, and no statute in India codifies the standard, unlike in the United States where Section 455 of Title 28 of the United States Code requires a federal judge to disqualify themselves in any proceeding in which their impartiality might reasonably be questioned.

### The NJAC precedent

The most directly relevant Indian precedent cuts the other way. When the validity of the National Judicial Appointments Commission Act, 2014 was before a five-judge Constitution Bench in *Supreme Court Advocates-on-Record Association v. Union of India* (2015), recusal was sought against Justice J.S. Khehar on the ground that he would eventually become Chief Justice and therefore had an institutional stake in whether the Collegium or the NJAC governed future appointments. Justice Khehar refused. His reasoning rested on two pillars. First, the conflict infected every judge on the bench, since all would eventually be part of the Collegium if the petitioners succeeded, or subject to the NJAC if they failed. Second, and more fundamentally, he invoked what legal systems call the doctrine of necessity: when the only available forum is also the forum that faces a disqualifying conflict, the conflict must yield to institutional obligation. "If I were to accede to the prayer for my recusal, I would be initiating a wrong practice, and laying down a wrong precedent," he held.

In his concurring opinion, Justice Kurian Joseph added that a judge choosing to recuse bears a constitutional duty of transparency, that indicating reasons for withdrawal is itself part of the oath of office taken under the Third Schedule of the Constitution.

### The present case

The structural logic of NJAC applies equally to the CEC law challenge, and arguably with less force for recusal. Every sitting judge of the Supreme Court is a potential future Chief Justice under the seniority convention established by the Second Judges case. The conflict of interest that moved Chief Justice Surya Kant to step aside, therefore, afflicts every member of the court simultaneously.



The doctrine of necessity then compels the conclusion that the Supreme Court must hear the case regardless, since no alternative court of equivalent jurisdiction exists, while acknowledging the conflict openly, as the NJAC Bench did. The CJI's recusal, viewed through this lens, represents a departure from a principle the court itself laid down a decade ago.

#### **A direction that binds successors**

More troubling than the recusal itself is the accompanying oral direction (as reported by the media, though the order uploaded is silent on this). By specifying that the replacement bench must exclude judges in line to become Chief Justice, the CJI has made a prospective determination about the disqualification obligations of judges who have not yet considered the question for themselves. Recusal is an act of individual judicial conscience. It cannot be mandated in advance by a predecessor. To pre-assign a conflict of interest to judges who have not adjudicated whether one exists is to collapse the distinction between institutional incapacity and personal disqualification.

There is a further problem the direction does not account for: the office of the Chief Justice has occasionally passed to judges outside the expected seniority line due to the resignation, health, or death of those ahead of them. A judge constituted on the replacement bench as someone outside the line of succession could, through such contingency, subsequently reach the office of Chief Justice. The prophylactic rule, designed to eliminate the appearance of self-interest, cannot account for the accidents of judicial mortality.

CJI Surya Kant's decision suggests another incongruity. If the CJI's recusal of himself and the other judges, who are in line to become CJI in the future is justified, can he, as Master of the Roster, decide which of the other judges can hear this case, given that the order authorises him to earmark the bench? In the recent debate on the no-confidence motion against Lok Sabha Speaker Om Birla, many members from the Opposition queried whether he could choose the person who would preside over the House during the proceedings, even while choosing to recuse himself. The answer from the government, that the Speaker's post does not envisage a vacancy in office, may be accurate, but it still fails to satisfy the doubts on conflict of interest, which led to the decision to recuse in the first place.

#### **The need for codification**

India has no statute governing judicial recusal, no binding code of conduct enforceable against Supreme Court judges, and no mechanism to review a recusal decision once made. The American experience illustrates both the value of clear rules and their limits without an external review mechanism: Section 455 provides a codified objective standard, but at the apex level it remains entirely self-enforced.

The CEC law dispute, in which two successive Chief Justices have now recused from the same case, underscores the urgency. When the question of who appoints the guardians of elections is left to a bench constituted by informal direction rather than principled rule, the deficit is institutional as much as it is individual.

India's constitutional framework is well-served by judges who exercise their discretion with care. It would be better served still by a framework that transforms that discretion into obligation.



## WHY DID THE SC ALLOW PASSIVE EUTHANASIA?

### The story so far:

On March 11, in India's first judicial approval of passive euthanasia, the Supreme Court allowed the withdrawal of life support for Harish Rana, 32, who had been in a vegetative state for nearly 13 years following a fall. The Bench of Justices J.B. Pardiwala and K.V. Viswanathan said that medical boards and Mr. Rana's family had both said that treatment had become futile and was not in his best interest. It held that the right to life included the right to die with dignity.

### What is passive euthanasia?

A simplistic view holds that passive euthanasia involves a negative act or an omission, such as withdrawing or withholding life support, while active euthanasia is an intrusion or positive act, such as administering a lethal injection. Active euthanasia is currently illegal in India.

However, the latest judgment helps us understand the difference in a more nuanced way. The Court noted that withdrawing life-sustaining treatment, such as switching off a ventilator, is a positive act. Relying on a simplistic 'act versus omission' test could wrongly place withdrawal of life support outside legal protections for passive euthanasia. Justice Pardiwala explained that the distinction lies in the source of harm: active euthanasia introduces a "new, external agency of harm, such as a lethal injection." Passive euthanasia does not involve a new risk of death, but the removal of an artificial barrier, which then allows the natural trajectory of life to continue and reach its inevitable conclusion. When a ventilator is withdrawn, death is "accelerated" only in the sense that the patient dies sooner than they would have if the machine had continued.

### What did the Court say about the 'right to die'?

The Court said there comes a point when even the state's interest in preserving life must yield to an individual's right to die with dignity. It said, "Temporarily keeping alive a terminally-ill patient who is brain dead or in a persistent vegetative state, solely because doctors are able to leverage the technological advancements in medicine, and compelling such patients to endure a slow, agonising death, cannot fully be compatible with the constitutional ideal of dignity." The Court observed that as the end of life approaches, a loss of control over human faculties denudes life of its meaning. It declared that the right to live with dignity under Article 21 of the Constitution extends beyond the preservation of life to encompass the right to die with dignity for a patient with an irreversible medical condition.

The Court also remarked that the term 'passive euthanasia' is obsolete. It said the term 'euthanasia' in India would strictly refer only to active euthanasia. The usage 'withdrawing or withholding of medical treatment' would replace the term 'passive euthanasia'.

### What is the 'best interests' test?

The test is based on the common law principle that any medical treatment constitutes a trespass against the person and must always be justified. The 'best interests' inquiry does not ask whether it is in the patient's best interest to die, but whether continuing life support through Clinically Assisted Nutrition and Hydration, as was done in Mr. Rana's case, artificially serves their best interest. The Supreme Court said there is no narrow, straight-jacket formula to understand what would be in the best interest of an unconscious or incompetent patient; that would require both medical and non-medical considerations. The Court explained that, at its core, the 'best interests'



inquiry is anchored in a strong presumption in favour of preserving life, reflecting the sanctity of life. But this presumption was not absolute and may be displaced when medical treatment artificially and futilely prolongs the suffering of a patient with an irreversible medical condition.

#### **What have been the past positions in India on the 'right to die'?**

The Supreme Court and the Law Commission of India have often addressed the right to die. In 1996, in *Gian Kaur v. State of Punjab*, a Constitution Bench distinguished between an attempt to suicide and abetment of suicide from “acceleration of the process of natural death”. It held that the right to live with dignity also includes the right of a patient to die with dignity when life was already ebbing out.

In 2006, the 196th Law Commission of India Report recommended that a terminally ill patient’s decision to discontinue medical treatment should not attract criminal liability if such withdrawal was in their best interests.

In 2011, the tragic case of the nurse, Aruna Shanbaug, in Maharashtra, saw the Supreme Court grapple with questions on the right to die amid a legislative vacuum. It prompted the Court to draw guidance from comparative jurisprudence and foreign legal frameworks. The Court then laid down guidelines permitting withholding of medical treatment for terminally ill patients with no chance of recovery.

A year later, the Law Commission, in its 241st Report, reiterated its 2006 suggestions. Four years later, the Health Ministry published a draft law, *The Medical Treatment of Terminally-Ill Patients (Protection of Patients and Medical Practitioners) Bill, 2016*, but no follow-up has been made in the past decade.

In 2018, a Constitution Bench of the Supreme Court, in *Common Cause v. Union of India*, laid down fresh guidelines detailing procedures, including constitution of medical boards, to deal with applications for withdrawal of life support and advanced medical directives (AMDs). The need for judicial intervention arose in the absence of law. One of the judges on the Bench expressed a “pious hope” that Parliament would wake up to enact a specific law.

In 2023, the Court intervened again to simplify the procedure for AMDs. In June 2024, the government released guidelines on withdrawal of life support for public consultations. However, no action has followed.

#### **WHY DO WE NEED A LIVING WILL?**

Birth and death represent the two ends of a person’s timeline. A disproportionate amount of preparation, attention and care is given to the first half — ranging from the anticipation of pregnancy, counselling and check-ups, to delivery and extravagant first birthday celebrations. Unfortunately, the same attention is rarely given to the opposite end — that is death. It is often left to chance, fuelled by the vague hope that ‘the right treatment decision will somehow be taken at the right time by someone.’

Therein lies the problem. No one — not even a doctor — knows exactly how their life will end, or whether they will be able to speak for themselves in their final days. It could be a relatively sudden event or a long-drawn-out process following a severe, irreversible illness. That choice isn’t ours to make. Ultimately, failing to plan ahead is often what separates a peaceful, dignified passing from a prolonged and distressing ordeal for the patient and their family.



A living will is a legal document that safeguards the individual's treatment preferences for certain irreversible conditions, essentially taking the burden off relatives and doctors in deciding on treatments in specific situations. Not having one could sometimes lead to crucial treatment decisions that the patient would not have made by themselves, needlessly prolonging their suffering.

The focus of a living will is specifically for situations in which the person develops a medical condition that is terminal or irreversible. There will be no compromise in routine treatment measures for other illnesses. For instance, a college lecturer suffers a brain injury from hypoxia after a near-drowning incident in a river. The person is paralysed, opens their eyes but cannot recognise anyone or respond — a condition commonly referred to as a persistent vegetative state. This could also happen following head injury, choking on food, strangulation or a stroke.

In such situations, not only is recovery not generally possible, but the person may remain in that condition for prolonged periods — painful for the family to watch and also expensive in the long run. Another example is a person with metastatic cancer at a stage where further treatment offers no improvement, where the person may be better off receiving comfort care (palliative care) than remaining in the ICU receiving more rounds of chemotherapy that only diminish quality of life in the limited days that remain.

Most people would expect their family members or close friends to step in and take the right decisions along with the doctors. However, in reality, the situation can turn chaotic because of emotional conflict, guilt, differences of opinion and contrasting attitudes among several decision-makers — at the end of which doctors will often take the safest route possible: continuing every treatment measure prescribed in the books, without consideration for quality of life or prospects for recovery. In addition, our next of kin may not be alive or available to make these decisions for us in the distant future. A safer alternative is for individuals to document their preferences ahead of time, when they are still in good physical and mental health, and also discuss it in advance with family members so that there is no conflict if and when the time comes.

The living will does not need to be invoked for everyone who is dying, especially when the person is still able to discuss their wishes with their doctors. The danger of not preparing one is that sometimes, other people may end up making life-changing decisions on our behalf when we are not in a position to indicate our preferences.

For instance, if a person enters an irreversible persistent vegetative state, doctors may place a feeding tube that pierces the stomach wall—because the patient can no longer swallow. Such individuals can remain in a paralysed, bedridden state for several years, sometimes a decade or longer. This may not be what the person would have wanted. In contrast, if this person had previously made a living will (advance directive) stating they did not want artificial feeding in the event of an irreversible illness, the treatment plan could shift to comfort care. This gives the person a chance to pass away gradually, in peace, and surrounded by loved ones.

The Supreme Court legally recognised these “advance directives” in the *Common Cause vs. Union of India (2018)* case. More recently, in the case of Harish Rana — where no living will existed — the Supreme Court enabled doctors to stop artificial feeding by classifying it as a treatment measure, while continuing comfort care until a natural death occurred.

Without a living will, many terminally ill patients spend their final days in the ICU, attached to numerous tubes, unable to speak, and cared for by strangers. This “disconnected” mode of dying



not only results in poor quality of life for the patient but also causes profound emotional distress for the family left behind.

#### **Clarity on treatments**

A living will typically specifies which life-sustaining treatments to withhold or withdraw — such as ventilators, feeding tubes, or CPR — only if the patient has no hope of recovery. It does not apply to routine hospitalisations, surgeries, or the treatment of common illnesses. For example, a person with metastatic cancer who has written a living will to avoid ICU care and artificial feeding for their underlying terminal illness will still receive full treatment for a limb fracture or appendicitis. In such cases, if they are temporarily unable to eat, they will receive artificial feeding and post-operative ICU care just like any other patient — to help them recover.

Artificial feeding is a life-saving tool for reversible conditions; it only becomes a point of concern when used to indefinitely prolong a state of irreversible suffering.

Studies have shown that having a living will does not affect total survival. At the same time, it helps reduce unnecessary medical interventions and expenses.

Discussing one's preferences with close relatives and the family doctor is helpful to receive guidance and clarity while planning a living will. Guidelines for EOLC (End Of Life Care) by The Indian Association of Critical Care Medicine and the Indian Association of Palliative Care have been published. Templates available online can be customised — as each individual may have different viewpoints for end of life care.

For instance, one person may not want any form of artificial feeding if an irreversible illness is confirmed — that is, if they become unable to swallow or feed themselves. Others may agree to artificial feeding, but may not want to be attached to a ventilator if their breathing becomes weak. A third person may agree to ventilator care but will not want CPR, and a fourth may want everything possible to be done. Patient autonomy dictates that individuals have the right to decide the treatment measures they will receive — as long as these decisions are taken in a state of sound mind.

Once drafted, the document requires the signatures of two witnesses and that of a public notary or gazetted officer. A magistrate's signature is no longer a requirement in India, thus the process has been simplified.

A living will is not just for older people. Young adults may be involved in road accidents or other sudden catastrophic events and hence benefit from having one. They can always update their living will depending on any change in preferences as they get older.

To sum it up, a living will might be all that we have available to speak on our behalf when we no longer have a voice, in a life filled with unpredictability. Reserved for irreversible or terminal illnesses, it cannot be invoked for recoverable illnesses, and therefore will not affect routine medical or surgical care.

### **GRANTING OF BAIL EN MASSE IN DOWRY DEATH CASES BY AN ALLAHABAD HC JUDGE IS TROUBLING**

In February, while overturning a bail order to the accused by the Allahabad High Court in a dowry-death case, the Supreme Court had flagged its glaring inadequacy, citing the order by the single-



judge bench of Justice Pankaj Bhatia as “most shocking and disappointing”. Now, an investigation by this newspaper has revealed that in three months, in 508 of 510 publicly available orders in dowry death cases passed by Justice Bhatia, bail was routinely granted, using similar logic, language and bond amounts. The near-uniformity signals a troubling lack of application of mind by the court and a dilution of due process: In cases as intimate and often difficult to prove as dowry violence, reducing judicial scrutiny to a template risks turning adjudication into a mechanical exercise, divorced from the specific facts of each case.

Bail jurisprudence, anchored in the maxim “bail, not jail”, demands a careful assessment of the severity of allegations. Especially in the case of dowry violence and death, Section 304B of the IPC (or Section 80 of the Bharatiya Nyaya Sanhita) creates a statutory presumption against the accused, treating the crime as heinous. Dowry-related violence tends to occur behind closed doors where evidence is sparse and witnesses vulnerable. But when judicial scrutiny seems to be brought to bear on these cases by rote, it threatens to leave women disproportionately exposed to systemic injustice. The Supreme Court has repeatedly stressed that high courts exercising powers under Section 439 CrPC (now Section 483 of the Bharatiya Nagarik Suraksha Sanhita, 2023) must engage in reasoned prima facie assessments that reflect in the structure and language of orders.

In critical rulings such as *State of Punjab v. Iqbal Singh* (1991) and *Shanti v. State of Haryana* (1990), the apex court has expanded the understanding of dowry-related violence and strengthened the legal framework to meet its challenges. In the landmark *State of Uttar Pradesh v. Ajmal Beg Etc* (2025), the SC reiterated that dowry-related violence goes against constitutional guarantees of Articles 14, 15 and 21, and that its eradication is a “constitutional and social necessity”. These are crucial lessons to remember. If the adjudication of such crimes slips into mechanical repetition, it is not just legal standards that are eroded, but the promise of justice as well.

## WHAT DID THE SC SAY ABOUT PAID MATERNITY LEAVE?

### The story so far:

Last week, the Supreme Court ruled that adoptive mothers could avail themselves of 12 weeks of paid maternity leave regardless of the age of their children at the time of adoption. Striking down Section 60(4) of the Social Security Code, 2020 (previously Section 5(4) of the Maternity Benefit Act, 1961), which limited this benefit only to mothers who adopted children under the age of three months, the Court said that an adoptive mother had the same rights and obligations towards the child as a biological mother.

### What is the law on maternity leave in India?

Statutory maternity benefits for working women in India began to be granted in colonial times. The Bombay Maternity Benefit Act, 1929, covered women factory workers. It was followed by similar laws in other parts of the country in the run-up to Independence. In 1961, Parliament passed the Maternity Benefit Act to provide paid maternity leave of 12 weeks to working women across the country.

In 2017, the Maternity Benefit (Amendment) Act not only extended the period of paid maternity leave for biological mothers to 26 weeks, but also inserted a provision extending maternity leave for the first time to adoptive mothers or surrogate mothers. Section 5(4) of the Act stated that



surrogate or adoptive mothers legally adopting a child below three months would be entitled to maternity leave for a period of 12 weeks from the date the child is handed over to the mother.

**Why was this law considered inadequate?**

This provision was challenged in 2021 by Hamsaanandini Nanduri, a lawyer who adopted siblings in 2017. Ms. Nanduri told *The Hindu* that her Bengaluru-based law firm gave her only six weeks of paid maternity leave. “I could not leave my young children at home to turn up in office after just six weeks, so I took some additional months of unpaid leave. But it made me angry that there was no policy about it,” she said.

Terming the 12 weeks of maternity leave granted in 2017 to adoptive or surrogate mothers as “mere lip service”, the petitioner contended that when compared to the 26 weeks of maternity leave granted to biological mothers, the provision violated the fundamental rights guaranteed under the Constitution.

The three-month limit was unjust to both children and parents, depriving older adoptees from receiving the maternal care they need for their development and integration into their adoptive families, her lawyer argued.

The petitioner also pointed out in Court that adoption procedures take much longer than three months in India.

Also, as Ms. Nanduri told *The Hindu*: “I found on filing an RTI (Right to Information) application with CARA (Central Adoption Resource Authority) that less than 5% of children adopted at that time were under the age of three months.”

**What did the Court say about motherhood?**

The Court made it clear that motherhood cannot be seen through the “narrow lens of biology” alone. It referred to adoption as part of the “right to reproductive autonomy”. It noted that “the period of leave plays a crucial role in fostering [an] emotional bond between the mother and the child”. The Court added that stress hormone levels in children raised in orphanages are often higher than those in children brought up in a familial environment, which pointed to a greater need for paid maternal leave for older adoptees.

**What did the Court say about paternity leave?**

The Court also called on the Union government to examine the need for a formal law recognising paternity leave for all fathers, adoptive or biological. Noting that India’s legal framework does not adequately account for the role of fathers in childcare, it underlined the importance of shared parenting. As of now, only male government servants are entitled to 15 days’ paternity leave for the birth of a child or adoption. Leaves in the private sector are generally determined by company policies.

**A SHADE OF DARK**

Bulldozing a Bill through Parliament and pushing it into law while ignoring the public outcry is verily a failure of the democratic process. The way the Transgender Persons (Protection of Rights) Amendment Bill, 2026 was rushed through both Houses of Parliament — amid Opposition walkouts and a storm of protests by the LGBTQIA+ communities — is condemnable. There was neither a transparent consultative process during the drafting of the Bill nor an informed



discussion on its various aspects in Parliament. While the Bill was framed as an effort to correct past legislative shortcomings, there is an apprehension among stakeholders that it applied a heteronormative lens to a law intended to address complex issues of gender identity and human dignity. The Bill explicitly states: “The purpose was and is not to protect each and every class of persons with various gender identities, self-perceived sex/gender identities or gender fluidities...” This stance has left many within the community uncertain regarding their legal standing. By moving away from broader definitions, the Bill has altered the legal landscape established by previous judicial precedents, such as the NALSA vs Union of India judgment. True, concerns have been raised about possible misuse of allowing self-perceived gender identities for those seeking to avail of public facilities and government benefits earmarked for transgender persons. But, in the attempt to do away with the contentious issue of self-identification of gender without certification by a medical board, it shifts the focus toward mandatory biological markers — including chromosomes, hormones, and genitalia — or specific socio-cultural communities such as kinner, aravani, hijra or jogta.

Moreover, it is problematic to conflate the distinct concepts of sex and gender as done in the Bill. In effect, the Bill reduces the psychological and socio-cultural markers of gender to biological characteristics. Only those identifiable within the specified set of socio-cultural communities escape the stipulations of the legislation. Despite these concerns, the government has maintained that the Act reflects a “collective conscience”, even as stakeholders suggest that the move limits existing protections instead of expanding them. Effective governance mandates engagement in consultation with all stakeholders. To address the current protests by members of the LGBTQIA+ communities, the government must return to a collaborative approach and move toward a rights-based law developed through a transparent consultative process. A new legislative proposal should aim to guarantee the equality of every citizen under the law, incorporate the perspectives of the LGBTQIA+ communities, and provide legal clarity while ensuring dignity for all. Otherwise, the government would appear to have created new problems in solving an old one.

## THE TRANSGENDER PERSONS AMENDMENT BILL, A FLAWED FIX

The Transgender Persons (Protection of Rights) Amendment Bill, 2026 (Bill No. 79 of 2026), introduced in the Lok Sabha on March 13, 2026, makes several sharp changes to the 2019 Act. It narrows the definition of “transgender person” to only specific socio-cultural identities such as kinner, hijra, aravani, jogta, eunuch, or biologically-defined intersex variations, or persons forcibly compelled into such an identity through mutilation, castration, amputation, or any surgical, chemical or hormonal procedure. It explicitly excludes persons with different sexual orientations and non-heteronormative gender fluid identities.

The Bill removes the right to “self-perceived gender identity” from Section 4(2), replaces the simple District Magistrate process with a medical board “authority” headed by a Chief Medical Officer, and mandates hospitals to report every transgender surgery to the District Magistrate and the authority.

### **Perpetuating structural problems**

The government claims that the new amendments fix the vagueness and implementation failures of the 2019 Act. Every year, thousands of intersex infants are killed or undergo medically unethical, non-consensual sex-selective surgeries that mutilate their bodies without regard for lifelong physical and psychological trauma, all in pursuit of a false “normalcy”. Millions of intersex



individuals remain ghosts in our Census systems, their births and deaths unregistered, rendering them invisible to legal protections and social services.

Even the highest authorities fail to grasp the fundamental distinctions between sex identity and gender identity, or between intersex variations and transgender identities, which fuels rampant discrimination. The Bill itself refers to male and female as “gender identity”, which is fundamentally wrong — male and female are sex identities. By clubbing sex identity under the gender column, the Bill creates new problems where it is meant to solve existing ones.

The government does not have reliable data on transgender and intersex persons in India. They want to grant us rights but do not know who we are. Separating sex and gender identity as different categories on official documents would address the root causes of this problem.

Despite the new wording, the Bill still lumps “persons with intersex variations” inside the definition of a “transgender person.” The term “transgender persons” often conflates distinct identities. The Trans Act’s definition includes persons with intersex variations under “transgender”, which erases intersex-specific needs. Intersex is a natural biological spectrum (recorded 1%-2% globally). Transgender identity is a psychological and social construct.

Retaining this conflation under one label violates rights under Article 21 to bodily integrity and privacy. It leaves out intersex infants without any specific ban on “normalising” surgeries and ignores repeated calls for separate intersex legislation.

The Bill’s definition also contradicts established international standards: the United Nations and the World Health Organization define intersex as innate variations in sex characteristics that do not fit typical male or female binaries, requiring distinct legal recognition and explicit protections against non-consensual medical interventions. By forcing intersex persons into a transgender category, the Bill undermines these global definitions and erodes the very human rights framework that India has committed to uphold.

The Bill leaves the outdated title, National Council for Transgender Persons, and all State Welfare Boards unchanged. It ignores the long-standing proposal to rebrand them as a National GIESC Welfare Council and State GIESC Welfare Boards (GIESC is Gender Identity/Expression and Sex Characteristics). This keeps the entire policy architecture trapped under the problematic “transgender” umbrella instead of creating a scientifically accurate, inclusive framework. The government continues to promote a single identity at the national level.

This heteronormative bill erases the reality that GIESC communities, including transgender persons, may have diverse sexual orientations such as transgay, translesbian, transbisexual, or queer.

#### **Legally empowering exploitative structures**

New clauses in Section 18 introduce rigorous imprisonment (between five to 14 years) for forcing adults or children into “transgender presentation” plus begging or servitude. Yet, the Bill does nothing to regulate or dismantle the colonial hijra jamath-gharana system. By targeting only external perpetrators while leaving internal hierarchies untouched, the amendment effectively legitimises and empowers the long-standing hijra jamath-gharana system, codifying it into law. These structures are not inherently traditional; earlier Indic frameworks were more inclusive and rooted in a broader, affirmative understanding of diverse identities, free from later external influences.



At present, chief hijra nayaks control chelas' earnings from begging and prostitution, trapping gender non-conforming children (often abandoned) in bonded labour. Meanwhile, thousands of gender non-conforming children, abandoned or rejected by families, are thrust into exploitative hijra jamath gharanas, havelis, and dayars, where education is a distant dream; instead, and forced into begging and prostitution.

State police often refuse to register missing child complaints for gender non-conforming children, and there are no dedicated policies to address their vulnerability to trafficking and abuse. There is also no framework for reform, rehabilitation, or protection of minors within these systems. By protecting these colonial-era identities without evidence-based safeguards, the government is undermining earlier inclusive traditions.

The Bill contains no requirement for genetic counselling by medical geneticists before certification, intersex surgeries and health management. It offers no mandate for India-specific longitudinal studies on "affirming surgeries" and raises serious privacy concerns due to inadequate safeguards.

Instead of addressing the problems faced by diverse GIESC communities such as administrative barriers and unregulated medical practices which include gender-affirming surgeries and hormone therapies (Government of India promotes freely despite severe health risks) the Bill offers only superficial measures with little relevance to their needs. Despite the 2019 UN CRPD recommendations to prioritise intersex welfare and dignity, these concerns remain largely neglected.

#### **No intersectionality**

The Bill contains no intersectional lens for caste, disability, poverty or religion. Transgender persons from Scheduled Caste/Scheduled Tribe or disabled backgrounds will continue to face compounded discrimination with zero targeted remedies. It also fails to protect India's family-dependent societal structures by skipping any requirement for rigorous, evidence-based research before policy changes. Most critically, the Bill is completely silent on civil and marriage rights of diverse GIESC identities. It offers no provisions for marriage, adoption, inheritance, divorce, or succession for transgender persons, leaving them without full legal recognition in family law, and perpetuating their exclusion from the very institutions that define citizenship and dignity in Indian society.

The 2026 Amendment Bill tightens some definitions and increases penalties for forced exploitation, but leaves every core structural flaw untouched — the hetero-normative erasure of diverse SOGIESC identities, the complete neglect of civil and marriage rights, the legal entrenchment of colonial hijra structures at the expense of ancient Indic heritage. India needs a scientific, culturally grounded approach that separates biological sex characteristics from gender identity, prioritises evidence over ideology, bans non-consensual intersex surgeries, ensures equal rights, dismantles exploitative systems, and protects the dignity of intersex persons and gender non-conforming children. The Constitution demands nothing less.

### **FAITHS AND FENCES**

The Supreme Court of India has reiterated a long-held, yet contested, principle of India's anti-discrimination jurisprudence — that protections and special provisions for Scheduled Caste (SC) communities will be available only to those who practise Hinduism, Sikhism and Buddhism. The



March 24 Court judgment arose from a Christian pastor who sought protections under the SC/ST (Prevention of Atrocities) Act, in Andhra Pradesh. The Court upheld a High Court decision that any member of the SC community who has converted out of the three religions specified in the Constitution (Scheduled Castes) Order, 1950, issued under Article 341, ceases to be an SC member. The original definition of SC included only Hindus, but was extended to Sikhs (1956) and Buddhists (1990). India's founding leaders, including first Prime Minister Jawaharlal Nehru, were clear that the extreme form of discrimination manifested in untouchability was unique to Hindu society. But political and social realities forced amendments later. SC communities began using religious conversion itself as an act of assertion and autonomy. Dr. B.R. Ambedkar himself led a mass conversion of SC members to Buddhism. Notably, he converted to Buddhism in 1956, the year when all SC communities practising the Sikh religion were brought under special provisions, including reservation.

There are theological and legal arguments for this distinction reiterated by the Court. It is often argued that in Christianity and Islam, there is no theological defence of discrimination based on social stratification. That Sikhism and Buddhism are part of the civilisational universe of Hinduism is an argument which has gained political and constitutional legitimacy. Under Explanation II to Article 25(2) of the Constitution, the definition of Hindu includes the Sikh, Buddhist and Jain faiths. Neither the theological nor the constitutional arguments for the exclusion of converts to Islam and Christianity from special protections are logically or empirically watertight, and hence the question continues to fester. Christian or Muslim converts continue to face discrimination, including untouchability, even within their new religious world. After all, discrimination needs no theological sanction. But the question of their inclusion remains a politically surcharged topic, with a commission headed by former Chief Justice of India K.G. Balakrishnan examining this. Many Dalit activists oppose the inclusion of converts within the existing quantum of reservation. Many members of SC communities who have converted to Christianity or Islam receive benefits under provisions meant for Socially and Educationally Backward Classes under Article 15(4) of the Constitution. The Court's decision is appropriate under the existing legal and constitutional scheme, and any change can only come through a political process and the legislative route.

#### STATE CANNOT PLACE 'ARBITRARY CEILING' ON DISABILITY LIMITS: SC

The Supreme Court has laid down that the state cannot impose "arbitrary" upper limits of disability to exclude candidates with special needs from jobs when they are otherwise equipped to perform their official responsibilities.

A Bench of Justices Vikram Nath and Sandeep Mehta said the Rights to Persons with Disabilities (RPwD) Act, 2016, only defines the base threshold or the "floor" for reservation eligibility. None of the provisions of the 2016 Act indicates that an upper limit could be prescribed in the matter of adjudging the suitability of a candidate for a particular post.

The legislature, through the 2016 Act, intended only to create a threshold of inclusion, specifically designating 40% as the minimum requirement to qualify for benchmark disability status.

"The RPwD Act does not empower the State to create an arbitrary 'ceiling' that excludes those with higher degrees of disability, provided they are otherwise capable of performing the functional requirements of the role through reasonable accommodation," Justice Mehta observed.

The Supreme Court invoked the Reasonable Accommodation Principle that allowed adjustments to be made to enable disabled persons to effectively counter the barriers posed by their disability.



The court was hearing an appeal filed by an advocate suffering from 90% permanent locomotor disability due to left shoulder disarticulation. Though he scored high marks in the written test conducted by the Himachal Pradesh Public Service Commission for the post of Assistant District Attorney, his candidature was rejected on the ground that the percentage of his disability exceeded the upper limit of 60% advertised for the job.

The State High Court had rejected his plea, compelling the lawyer to move the apex court, which ordered his appointment to the post in two weeks.

The top court found no intelligible or rational criterion in the prescription of the upper limit of 60% disability. It said the candidate had functioned competently as a law professional despite his disability for 15 years.

“This upper limit of disability has clearly been prescribed in sheer ignorance of the principle of reasonable accommodation, and hence the same cannot be sustained in law,” Justice Mehta said.

#### PERMANENT COMMISSION, PENSIONARY BENEFITS FOR ELIGIBLE WOMEN OFFICERS: SC

The Supreme Court Tuesday directed the armed forces to grant permanent commission to eligible women officers, and ordered full pension and consequential benefits for those who had already been released, treating them having completed 20 years of qualifying service required to earn a pension.

##### Key Takeaways:

- In a significant verdict for gender equality in the armed forces, the Supreme Court Tuesday highlighted a “systemic” problem in how Short Service Commission Women Officers (SSCWOs) were evaluated for Permanent Commission (PC) across the Army, Navy, and Air Force.
- A bench of Chief Justice of India Surya Kant and Justices Ujjal Bhuyan and N K Singh said the Annual Confidential Reports (ACRs), which played “a pivotal role” in their evaluation for PC, were prepared at a time when there was no policy to grant them Permanent Commission but were subsequently used to evaluate them for PC and thus was “unfair and arbitrary”.
- In the case of the Air Force SSCWOs, the bench said that their ACRs, “having never been authored to assess their suitability for career progression, could not have been considered as indicative thereof, and utilised to deny them the grant of PC later on”.
- The court also held that though a Minimum Performance Criteria was introduced for the first time in 2019, it “was implemented in haste without affording the” SSCWOs “a reasonable opportunity to meet such criteria prior to the conduct of the first Board in 2019”.

##### Do You Know:

- According to recent figures, there are 1,653 women officers currently serving in the Army out of a total of nearly 43,000 officers. Apart from the Judge Advocate General’s branch and Army Education Corps where Permanent Commission was already given, the eight other branches to get women officers as permanent commissioned officers are Signals, Engineers, Military Intelligence, Army Air Defence, Army Ordnance Corps, Army Service Corps, Army Aviation Corps and Corps of Electronics and Mechanical Engineering.



- A Permanent Commission (PC) in the Indian Armed Forces grants a career officer the right to serve until the age of superannuation (retirement), providing long-term stability, pension benefits, and promotional avenues, unlike the 10–14 year tenure of a Short Service Commission (SSC).

## IS COMPULSORY VOTING FEASIBLE IN THE INDIAN CONTEXT?

### The story so far:

The Election Commission has announced the poll schedule for five Assembly elections to be held in April-May 2026. In a separate hearing before the Supreme Court on a poll-related matter, the court raised questions regarding mandatory voting in elections.

### What is the right to vote in India?

Article 326 of the Constitution grants every citizen the right to vote without any discrimination. It provides that any citizen who is not less than 18 years old and is not otherwise disqualified under the Constitution or any law on certain grounds is entitled to be registered as a voter.

Section 19 of the Representation of the People Act, 1950, requires a citizen to be at least 18 years old and ordinarily resident in a constituency to be registered as an elector. Section 62 of the Representation of the People Act, 1951, provides the right to vote to every person whose name is entered in the electoral roll of a constituency. In various cases, the Supreme Court has held that the right to vote is a statutory right.

### Should voting be made compulsory?

Voting is essential for a functional democracy, but it is neither a fundamental duty nor a legal duty in India. Proposals for compulsory voting have long been debated.

The Dinesh Goswami Committee on electoral reforms, set up in 1990, did not favour compulsory voting, citing practical difficulties in implementation. Instead, it recommended improving voter participation through awareness campaigns.

The Law Commission, in its 255th report (2015), discussed the issue in detail. Compulsory voting does result in increased voter turnout by an average of about 7%. Nevertheless, this increase in participation is a direct corollary of the severity and strict enforcement of penalties for not voting.

Some democracies, such as Australia and several Latin American countries, have provisions for compulsory voting. In Australia, Argentina, and Brazil, voters may be fined if they fail to vote without valid reasons. In Peru, certain public goods and services are denied to non-voters.

Penalising non-voters by imposing fines or restricting their access to government services is an extremely harsh measure that will not work in the Indian context. From a constitutional perspective, compulsory voting could be seen as violating the fundamental right to freedom of expression under Article 19(1).

### What can be the way forward?

Low voter turnout can result in candidates winning by securing a minority of the total votes in a constituency.



However, as discussed in the Law Commission report, compulsory voting is neither desirable nor feasible in India. The solution lies in fostering enthusiasm amongst voters to exercise their right to vote through innovative campaigns, especially using social media.

For migrant workers, stricter implementation of the statutory holiday on the day of polling, coupled with an increase in transport facilities by running special buses and trains, can effectively increase participation. With the advent of newer technologies, robust and secure methods acceptable to all stakeholders for remote voting should be considered.

#### INDIA'S 'NEWEST VOTERS' CAUGHT IN SIR ADJUDICATION TRAP IN WEST BENGAL

India's "newest voters" — former residents of Indian enclaves in Bangladesh who relocated to India under the 2015 Land Boundary Agreement (LBA) and were granted Indian citizenship — are now caught in the Election Commission's Special Intensive Revision (SIR) of electoral rolls in West Bengal.

Despite having voted in previous elections, many of these citizens (including families in the Dinhatra settlement camp in Cooch Behar district) have been placed in the "electorate under adjudication" category due to the absence of legacy data linking them to the 2002 voter list, stemming from their prior stateless existence before the LBA.

Their names did not appear in the first list of cleared cases on March 23, leaving their voting rights uncertain for the upcoming West Bengal Assembly polls. Residents argue that, having been brought to India through a bilateral international agreement, they should not be subjected to the SIR process at all, and some allege a communal bias in how adjudication is being applied across different enclave settlement camps.

The SIR process is creating barriers for LBA-enclave migrants who acquired citizenship through the 2015 agreement, effectively putting their voting rights in limbo despite their legal status as Indian citizens.

#### Former HC judge to move tribunal after name removed from Bengal electoral roll

Calcutta High Court's retired judge and West Bengal Waqf Board chairperson Shahidullah Munshi has claimed that his name has been deleted after judicial scrutiny of the electoral rolls and he will move an appellate tribunal. The exclusion came to light after the publication of the first supplementary list of under-adjudication voters on Monday.

Justice Munshi said the names of his wife and elder son continue to remain under adjudication. The chairperson of the State Waqf Board also said he had appeared for the SIR hearing, submitted his passport and offered to provide his Aadhaar and PAN cards. The retired judge said his family found their names marked as under adjudication in the post-SIR electoral roll published on February 28.

#### BJP SEAL ON EC LETTER SPARKS ROW IN KERALA

The presence of a seal of the BJP Kerala unit on a 2019 Election Commission of India (EC) letter on poll-related guidelines, which was distributed to political parties recently, sparked a row in the State on Monday, the final day for submitting nominations for the April 9 Assembly polls.



While the ruling CPI(M) alleged that “seals are being casually swapped” and questioned whether “all pretences” have been dropped by the BJP, Chief Electoral Officer (Kerala) (CEO) Rathan U. Kelkar attributed the issue to a “clerical error” and added that corrective measures had been taken.

The CPI(M) had shared on its X handle a copy of a March 19, 2019, Election Commission letter bearing the BJP seal. The letter, to CEOs of all States and Union Territories ahead of the 2019 Lok Sabha polls, dealt with the EC guidelines on the publicity of criminal antecedents by political parties and candidates. Copies of the letter had been issued afresh to political parties by mistake, according to the CEO’s office.

#### **Clerical error, says CEO**

The CEO issued a clarification attributing the episode to a clerical error and asking everyone to avoid spreading the “wrong message.”

According to him, the BJP Kerala unit had visited the CEO’s office seeking clarification on the EC guidelines.

The party seal was on a copy of the EC letter submitted along with the application seeking the clarification.

“The old letter was distributed to political parties due to an oversight,” Mr. Kelkar said.

Once the error was noticed by the CEO’s office, all political parties, district election officers, and returning officers were told in writing that the letter was being withdrawn and it should be disregarded, he said.

### 170 CUSTODIAL DEATHS IN FIRST 74 DAYS THIS YR: MHA

All nine police personnel convicted in the 2020 custodial deaths case, in which trader P Jayaraj, 58, and his son J Benicks, 31, died after being severely assaulted in police custody in the southern Tamil Nadu town of Sattankulam, were sentenced to death by the First Additional District and Sessions Court in Madurai on Monday.

A total of 170 custodial deaths were reported across the country in the first 74 days (up to March 15), which has surpassed the previous year’s figure of 140, the Home Ministry told Parliament.

#### **Key Takeaways:**

- According to state police and NHRC data, Bihar topped the list with 19 cases, followed by Rajasthan (18), Uttar Pradesh (15), while the states of Gujarat, Maharashtra and Punjab reported 14 cases each, MoS Home Nityanand Rai told the Lok Sabha on Tuesday.
- Data provided by the Home Ministry shows that in Uttar Pradesh, eight custodial deaths were reported in 2021-22, 10 in 2022-23, 12 in 2023-24, 11 in 2024-25 and 15 till March 15 this year. “In Gujarat, there were 24 deaths in 2021-22, 15 in 2022-23, 18 in 2023-24, 14 in 2024-25 and 14 this year. Maharashtra reported 30 deaths in 2021-22, 22 in 2022-23, 21 in 2023-24, 14 in 2024-25 and 14 this year,” Rai said.



**Do You Know:**

- Torture has been defined in the UN Convention (1984) as “any act by which severe pain or suffering, whether physical or mental, is intentionally inflicted on a person for such purposes as obtaining from him or a third person information or a confession, punishing him for an act he or a third person has committed or is suspected of having committed, or intimidating or coercing him or a third person, or for any reason based on discrimination of any kind when such pain or suffering is inflicted by or at the instigation of or with the consent or acquiescence of a public official or other person acting in an official capacity.”
- India signed the UN Convention against Torture (UNCAT) in 1997 but has not ratified it, which means it is legally not binding on India. The report brings out that 20 per cent of the police personnel feel that it is “very important” for the police to use “tough methods” to create fear amongst the public and another 35 per cent think it is “somewhat important.”
- In other words, 55 per cent of police personnel favour tough methods to some degree. Significantly, they have not talked of torture. What these tough methods are and at what stage they assume the dimensions of torture have not been clarified in the report.
- In cases involving sexual harassment and child lifting, one in four police personnel justify mob violence, implying that they do not mind mobs acting as the judge, jury and executioner in such cases.
- Another disturbing finding is that 22 per cent of police personnel believe that killing “dangerous criminals” is better than giving them a legal trial. But, it is also a fact that 74 per cent police personnel are of the view that “no matter how dangerous a criminal is, the police should try to catch them and try to follow proper legal procedures.”
- In matters of arrest, although 41 per cent police personnel said that the procedures are “always” adhered to, 24 per cent said that they are “rarely or never” adhered to. Kerala, where 94 per cent said “always”, reported the highest compliance.
- On the use of third-degree methods, 30 per cent of police personnel said that these are justified towards the accused in serious criminal cases. Surprisingly, 9 per cent justified these methods even in petty offences. The victims of torture are, unfortunately, mostly from poor and marginalised communities. The groups generally targeted are Adivasis, Dalits and Muslims, people who cannot read and write, and slum dwellers.
- Custodial deaths showed discrepancies in figures furnished by different agencies. Thus, in the year 2020, the National Crime Records Bureau (NCRB) reported 76 cases, while the National Human Rights Commission reported 70 cases. The National Campaign Against Torture (NCAT), a civil society initiative, documented 111 cases. It was a shocking revelation that during 2018-22 there were zero convictions for deaths in police custody.

**BARRING OF ID PRAYER AT JAMA MASJID IRK OMAR, MEHBOOBA**

The closure of the historic Jama Masjid for Id prayers and omission of any special prayers for Iran and Palestine at Srinagar’s Hazratbal shrine by the J&K Waqf Board on Saturday drew criticism from Chief Minister Omar Abdullah and Peoples Democratic Party (PDP) president Mehbooba Mufti.



On the occasion of Id, peaceful congregational prayers were held across Jammu and Kashmir amid heightened security. Special prayers were held for Muslims living in Iran, Palestine and Lebanon, who are facing casualties due to the ongoing war in West Asia.

However, the Anjuman Auqaf Jama Masjid, the caretaker body of Srinagar's central mosque, alleged that "restrictions were imposed on the Id congregational prayers at the historic Jama Masjid". "The authorities' move was unfortunate and unjustified. Such measures hurt the religious sentiments of millions and undermine the fundamental rights to freely practice one's faith," according to Auqaf sources.

Kashmir chief cleric Mirwaiz Umar Farooq, who leads the prayers at the Jama Masjid, was allegedly put under house arrest. "For the seventh consecutive year, amid restrictions and house arrests, Id prayers remain barred at Jama Masjid. It is an irony of our times that those who lock our mosques and Eidgah are the first to wish us Id Mubarak," Mr. Mirwaiz said.

### **Jama Masjid closure**

Meanwhile, the Chief Minister also opposed the Jama Masjid closure. "Id prayers have once again been disallowed at Jama Masjid. Id prayers were offered peacefully across J&K. Security and law enforcement officials repeatedly say that the situation is normal. But what kind of normalcy is this? I hope that such decisions will be changed and people will be allowed to offer their prayers freely," said Mr. Abdullah, who offered the Id prayers at the Hazratbal shrine along with his father and National Conference (NC) president Dr. Farooq Abdullah.

Mr. Abdullah said he prayed for Muslims caught in war-torn countries of West Asia. "This Id is being celebrated at a time when the whole Ummah is worried. There might not be a single Islamic country where war is not happening. Today, I prayed that this war imposed on our people is stopped and peace is restored," said Mr. Abdullah.

Ms. Mufti also offered prayers at the Hazratbal shrine and held "special prayers for Palestine, Lebanon and Iran". She, however, criticised the priest of the Hazratbal shrine, run by the J&K Waqf Board headed by BJP leader Darakshan Andrabi, for dropping Iran, Palestine and Lebanon from special prayers.

"It was surprising that the head priest at the Hazratbal shrine was praising just one person. There was no mention of Iran, Palestine and Lebanon. The cleric should have prayed for the entire Muslim Ummah," said Ms. Mufti. She also criticised the closure of the Jama Masjid in Srinagar for Id prayers.

## **DIGITAL EXILE**

A decade-long trend in digital governance in India crescendoed last week when a slew of social media accounts operated by independent activists and journalists were blocked apparently for criticising the Union government and Prime Minister Narendra Modi over his government's West Asia policies and the LPG crisis. In seven years, from 2014 to 2021, the number of URLs, posts, and accounts blocked ballooned from 470 to 9,800; since then, there is evidence that entire accounts, especially if they were publishing politically unfavourable comments, were being blocked. There was a wave of censorship during the farmers' protest in 2020-21; the government restored many accounts after international outcry but this also demonstrated that it was not beyond mass censorship. Similarly, the government used emergency powers under the IT Rules to block links to a BBC documentary in 2023, which also expanded the definition of what constituted a "threat

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



to public order". But when Twitter (now X) challenged several blocking orders, between 2021 and 2022, in the Karnataka High Court, the High Court dismissed the plea and fined Twitter, further emboldening the state to censor accounts.

In *Shreya Singhal* (2015), the Supreme Court of India upheld Section 69A of the IT Act 2000 precisely because of its procedural safeguards, including requiring reasoned orders and judicial review. In practice, however, the government has been diluting the safeguards through an expansive use of Rule 16 of the 2009 Blocking Rules, which requires blocking proceedings to be confidential. When this stipulation is invoked to withhold blocking orders or their reasons from affected parties, it undermines their ability to challenge the action in court, eroding the very safeguards that justified the constitutionality of Section 69A. The 2009 Rules also require blocking orders to be reviewed by a committee composed under the IT Rules 2009, yet this is an entirely executive body and has never overturned a government blocking order. In effect, the government is openly and systematically bypassing the right to be heard and violating the doctrine of proportionality. Rule 16 is a procedural rule, yet the government is using it to override the constitutional right to free speech while shielding itself from judicial review. A person's entire account being blocked amounts to a digital exile, removing the person from the public square, which is a hallmark of an authoritarian government rather than of a liberal democracy. The government's plan to decentralise blocking powers to multiple Ministries could effectively create a regime of arbitrary censorship, where any department can silence a critic without the specialised oversight, however flawed, of the IT Ministry.

#### HOME MINISTRY SENDS 290 TAKEDOWN NOTICES A DAY

Within a year of being empowered to directly issue takedown notices for online content, the Union Home Ministry issued an average of 290 such notices every day, according to the Ministry's data.

On March 13, 2024, the Indian Cyber Crime Coordination Centre (I4C) was designated as the Ministry's agency to perform the functions under Section 79 (3) (b) of the Information Technology Act, 2000.

According to the Ministry's annual report for 2024-25, published on Wednesday, till March 31, 2025, "1,11,185 suspicious online content have been blocked under Section 79(3)(b) of IT Act."

Though Section 79(1) of the IT Act shields online platforms and social media intermediaries from legal liability for content posted by users, Section 79(3)(b) of the IT Act says that the shield will not apply if they fail to take down the content despite being flagged by government authorities.

Social media intermediary X had challenged this provision and the Sahyog portal, which enables police across the country to send such notices through a common platform, in the Karnataka High Court but the petition was turned down by the court in 2025.

*The Hindu* reported on March 29, 2025 that nearly a third of the 66 takedown notices sent to X by the I4C sought removal of content about Union Ministers and Central government agencies. Social media platforms and other intermediaries are required to remove unlawful content within three hours of the receipt of an order of a court of competent jurisdiction or a reasoned intimation by the Appropriate Government or its agency, the Ministry of Electronics and Information Technology (MeiTY) informed Parliament recently.

Besides the Home Ministry, there are other government departments empowered under the particular section to issue takedown notices.



### Cybersecurity cases

Separately, on March 24, the Ministry informed the Lok Sabha that the number of cybersecurity incidents reported in India has risen sharply over the past five years, according to data tracked by the Indian Computer Emergency Response Team (CERT-In), the national agency responsible for responding to cyber threats.

CERT-In, which functions under provisions of Section 70B of the Information Technology Act, 2000, recorded 29.44 lakh cyber security incidents in 2025, the highest figure in the last five years. The number of such incidents was 20.41 lakh in 2024.

As per CERT-In, the highest number of cyber incidents reported is from National Capital Territory of Delhi.

### CENTRE LAUNCHES AI SKILLING DRIVE WITH GOOGLE, YOUTUBE

Union Minister Ashwini Vaishnaw on Monday unveiled three new initiatives aimed at strengthening India's media, broadcasting, and digital sector and promoting the "orange economy", or the creative economy.

The creative economy includes industries where economic value is generated primarily from creativity, culture, technology, and intellectual property.

The three initiatives are named the National AI Skilling Initiative in partnership with Google and YouTube through the Indian Institute of Creative Technologies (IICT); MyWAVES, a citizen creator platform on WAVES OTT; and the rollout of advanced Electronic Programme Guide and in-built satellite tuners in television sets for enhancing access to DD Free Dish services.

Key media and entertainment industry representatives, the head of YouTube India along with senior Ministry officials took part in the event.

Underscoring Prime Minister Narendra Modi's vision of democratising technology, Mr. Vaishnaw said the initiatives will make technology more affordable and accessible. He said that with in-built satellite tuners and an advanced programme guide, citizens can now access content easily without additional equipment.

He described MyWAVES as a powerful platform for content creators, enabling them to create, upload, and share content.

Referring to the Union Budget announcements, he underlined the government's commitment to promoting the "orange economy" and supporting the creative sector.

The Union Minister said under the National AI Skilling Initiative, being implemented with the support of YouTube, about 15,000 youth will be trained without levying any fee.

He spoke about the "Creators' Corner" scheme and urged content creators to actively use Doordarshan and platforms such as MyWAVES to showcase India's rich culture and regional diversity.

Speaking about the partnership's impact, YouTube India managing director Gunjan Soni said: "We believe that AI has the potential to open up remarkable opportunities for India's dynamic creative economy. Through our collaboration with the Ministry of Information & Broadcasting and IICT,



we aim to equip creators and professionals with the skills required to master the tools of the future, leverage AI to tell more compelling stories... expand their reach to new audiences, and play a role in shaping the future of media.”

The AI skilling programme will be conducted in two phases — Phase I from March 23 to June 30 2026, and Phase II from July to December 2026.

The first phase will focus on foundational AI learning at scale through Google Career Certificates and Google Cloud Generative AI learning paths. Participants will undergo courses such as AI Essentials, Prompting Essentials, Introduction to Generative AI, and Generative AI Leader Path.

The second phase will involve advanced, project-based specialisation for the creative industry. The curriculum will include modules on the art of storytelling, YouTube best practices, and advanced training using AI tools such as Gemini 3 and Vertex AI.

## A POLICE FORCE MORE SENSITIVE TO THE NORTHEAST

The Union home ministry’s recommendation urging cities across the National Capital Region to appoint nodal officers to address racism against citizens from the Northeast is a necessary intervention. It is an implicit acknowledgement of the persistence of prejudice even in cosmopolitan spaces. Unfortunately, discrimination — casual slurs, housing bias, workplace exclusion, and, in some instances, fatal violence — continues to shape the lived realities of people from the Northeast in other parts of the country. In December last year, Anjel Chakma, a student from Tripura, was fatally stabbed in a racial attack in Dehradun. In February, three women from Arunachal Pradesh were reportedly targeted in Delhi’s Malviya Nagar. Earlier this month, a lawyer from Manipur faced similar harassment in the same neighbourhood. Against this backdrop, the proposal reinforces the recognition of racism as a systemic issue that requires sustained administrative attention.

At the same time, the recommendation’s promise must also be measured against the efficacy of existing mechanisms. Nodal officers are not new to NCR — Delhi already has one at the rank of Joint Commissioner who coordinates with its 15 police districts. Gurgaon, too, has a similar arrangement. There is a unit within Delhi Police — the Special Police Unit for the North Eastern Region — to provide support and redress. The persistence of complaints, however, points to the limited success of the existing mechanisms. Awareness remains low, and trust deficits endure between law enforcement and affected communities. Expanding the system to other cities without addressing these gaps risks creating a bureaucratic layer that looks responsive on paper but struggles to be so in practice. The proposal must be accompanied by better outreach, sensitisation of police personnel to diversity, and greater transparency and accountability.

Earlier this week, Rajya Sabha MP Nabam Rebia urged the government to bring in stricter legal safeguards and ensure time-bound action against racial hate crimes. The urgency of reform is sharpened not merely by past tragedies but also by long-standing recommendations that are yet to be fully realised. The murder of Nido Taniam from Arunachal Pradesh in Delhi’s Lajpat Nagar Market in 2014 had led to the formation of the Bezbaruah Committee. The renewed push for nodal officers is a step in the right direction, particularly if it builds on the committee’s framework.



## CENTRE PUSHES FOR BIOMETRIC CHECKS ON SIM ISSUANCE TO TACKLE DIGITAL ARREST SCAMS

In a bid to tighten SIM card issuance and curb fraud, the Department of Telecommunications (DoT) has been directed to fast-track the rollout of a Biometric Identity Verification System (BIVS) across all telecom service providers within nine months.

### Key Takeaways:

- The directions were issued by a high-level Inter-Departmental Committee (IDC) constituted by the Union Ministry of Home Affairs (MHA) to tackle the threat of digital arrest. They came earlier this month during a high-level committee meeting chaired by a senior MHA official, with inputs from representatives of Telecom Service Providers (TSPs) and DoT.
- According to the official, during the discussion, DoT is learnt to have informed that they currently identify multiple SIMs issued to an individual on a best-effort basis using demographic and facial data, as Aadhaar storage remains legally restricted.
- The official said that DoT and TSPs have been directed by the committee to explore slashing suspicious SIM blocking time to two-three hours. “TSPs have been directed to build mechanisms for sharing suspect spam and scam numbers among themselves, DoT, and law enforcement agencies (LEAs) for proactive blocking.”

### Do You Know:

- Facial recognition technology-Facial recognition technology as the name suggests can identify a person by capturing his face from a photo or video. The technology can work in real-time as well and relies on advanced machine learning algorithms powered by deep neural networks to identify faces and map them to an existing data base.
- Digital Arrests-Online frauds and criminals typically call potential victims and tell them that they have sent or are the intended recipients of a parcel containing illegal goods, drugs, fake passports or any other contraband item. In some cases, the criminals contact relatives or friends of the target and tell them that the target has been found to be involved in a crime or an accident, and is in their custody.
  - The criminals, who often use pictures or identities of police personnel to convey authenticity, usually demand money from the target for a ‘compromise’ and closure of the case. In certain cases, the victims are “digitally arrested”, and forced to stay visible over Skype or other video conferencing platforms to the criminals until their demands are met.
  - The cybercriminals are also known to use studios that look like police stations or government offices, and to wear uniforms similar to those of law enforcement agencies.

## TEPID PROMISES

India came in late, but it was worth the wait. A section of the Paris Agreement, under which all countries except the United States have agreed to keep temperatures from rising beyond 2°C of pre-Industrial times, requires updating their targets every five years from 2020. As of December last year, India and Argentina were the only two G-20 countries that had not announced updated Nationally Determined Contributions (NDC) for 2035. This was despite India’s Environment



Minister committing at COP30 in Brazil, in November 2025, to update by the 'year-end'. The saving grace is that this happened in time before Financial Year 2025-26 ends in a week. The latest set of NDCs by India commits to, by 2035, an installed electric capacity that is 60% from non-fossil sources; reducing, by 47%, the intensity of emissions per unit of GDP and having a 3.5 billion tonne-4 billion tonne CO<sub>2</sub> carbon sink. This is an update over India's 2020 NDCs: of an installed electric capacity that is 50% from non-fossil sources; reducing, by 45%, the intensity of emissions per unit of GDP and having a 2.5 billion tonne-3 billion tonne CO<sub>2</sub> carbon sink. Thus, the necessary boxes have been ticked.

The EU has committed to a 40%-49% cut below 2005 levels. As a developing nation, India — a significant contributor of net emissions in recent years but below the world average in per capita emissions — will not cut annual emissions but promises to emit less carbon per unit of energy and source more of its power from non-fossil sources. It has also committed to being net zero by 2070 through increasing its tree and forest cover (which absorb CO<sub>2</sub>) and the recently announced technology pathways such as carbon capture, utilisation, and storage. India's 2035 goals are easily achievable and the government has expressed that plainly. India already met its 2030 non-fossil target last year, with 52% capacity installed. The rub is that only about 25% of the power generated is non-fossil due to insufficient battery storage which is unable to harness all the available solar and wind power. The Power Ministry's National Generation Adequacy Plan itself expects 70% of the projected installed 1,121 GW capacity by 2035-36 to be non-fossil. It is tempting to laud India for embellishing its green commitments amidst a war in West Asia that has squeezed supply of a vital fossil fuel. However, without actual improvements in generated supply, these numbers mean little. With the war demonstrating the chokehold that a fossil fuel has, India must exhibit more urgency toward enhancing battery storage and improving its electric grid to better utilise existing non-fossil capacity.

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

- According to PMO released statement, "the Union Cabinet, has approved India's Nationally Determined Contribution (NDC) for the period 2031 to 2035, enhancing the country's ambition under the UNFCCC and its Paris Agreement while reinforcing its commitment to sustainable development and climate justice".
- The PMO released statement further asserts that India's original climate commitments i.e. NDC submitted in 2015, laid a strong foundation, with targets by 2030 of 33-35% reduction in the emissions intensity of GDP and 40% share of non-fossil resources based electric power installed capacity, both of which were met, 11 years and 9 years ahead of the committed timelines, demonstrating a credible and action-oriented approach to climate governance. Now the target has now been enhanced to 47% to be achieved by 2035.
- According to the UNFCCC website, Nationally determined contributions (NDCs) are at the heart of the Paris Agreement and the achievement of its long-term goals. NDCs embody efforts by each country to reduce national emissions and adapt to the impacts of climate change. The Paris Agreement (Article 4, paragraph 2) requires each Party to prepare, communicate and maintain successive nationally determined contributions (NDCs) that it intends to achieve
- According to the UNFCCC website, the Paris Agreement is a legally binding international treaty on climate change. It was adopted by 195 Parties at the UN Climate Change Conference (COP21) in Paris, France, on 12 December 2015. It entered into force on 4 November 2016. Currently, as of 27 January 2026, there are 194 Parties to the Paris Agreement.



—Its overarching goal is to hold “the increase in the global average temperature to well below 2°C above pre-industrial levels” and pursue efforts “to limit the temperature increase to 1.5°C above pre-industrial levels.”

- According to the UNFCCC website, at the COP29 UN Climate Change Conference in Baku (November 2024), nearly 200 countries established a new climate finance goal, aiming to increase annual funding for developing nations to USD 300 billion by 2035. This agreement, known as the New Collective Quantified Goal (NCQG) on Climate Finance, includes an aspirational, broader aim of mobilizing \$1.3 trillion per year from public and private sources by 2035.
- According to the PIB, at COP29 in Baku (2024), India strongly rejected the new climate finance deal, calling the agreed USD 300 billion annual target by 2035 “abysmally poor” and “an optical illusion”. Representing the Global South, India argued this falls far short of the required \$1.3 trillion annual funding needed for developing nations, emphasizing the need for public, grant-based finance rather than loans.
- According to the UNFCCC website, Climate finance refers to local, national or transnational financing—drawn from public, private and alternative sources of financing—that seeks to support mitigation and adaptation actions that will address climate change. The Convention, the Kyoto Protocol and the Paris Agreement call for financial assistance from Parties with more financial resources to those that are less endowed and more vulnerable.
- A carbon sink is anything that absorbs more carbon from the atmosphere than it releases – for example, plants, the ocean and soil.

#### WHY TRANSPORT MUST SIT AT THE CENTRE OF INDIA’S AIR QUALITY STRATEGY

As another winter draws to a close, so does a familiar cycle: air pollution spikes, emergency steps follow, yet air quality barely improves. Meanwhile, residents stay exposed to toxic pollutants that harm public health.

Instead of recurring short-term responses, what is needed is sustained structural reform. If clean air is the goal, transport must be placed at the centre of air-quality policy.

A decade of evidence from Delhi explains why. Transport is consistently a dominant source of toxic combustion pollutants and among the largest contributors to fine particulate matter (PM<sub>2.5</sub>), exposure to which can lead to respiratory illness, cardiovascular disease and other health issues. Studies show transport contributes 20%–40% of PM<sub>2.5</sub> in Delhi annually, but this rises to over 50% during peak pollution months when local sources are isolated. Health assessments attribute 30%–35% of PM<sub>2.5</sub>-related deaths in Delhi to transport, equivalent to about 13,000 premature deaths annually, making it the single largest contributor to mortality.

Studies show citywide air-quality readings understate the risk to local population: a study shows PM<sub>2.5</sub> levels are about 40% higher while walking, 30% higher riding two-wheelers and auto-rickshaws and 20%–30% higher for those on buses and at bus stops. As a result, for commuters, street vendors, delivery workers, and traffic police, pollution exposure is high and continuous.

#### Policy margins

Despite impact on human health, transport is at the margin of air quality policy because transport reform is politically difficult. It needs confronting congestion, reallocating road space, regulating



freight, enforcing emission standards and investing steadily in public transport. These structural interventions demand institutional capacity and long-term commitment

#### **What is needed**

It is said lasting change comes from systematically improving each contributing behaviour. Applied to air pollution, this means targeting major sources via clear, time-bound pathways. Transport is particularly suited to this approach: emissions are measurable and sources well identified, exposure is direct and interventions can deliver durable reductions alongside co-benefits such as reduced congestion and safer streets.

#### **Demand side tilt**

Yet policy responses have largely relied on demand-side subsidies, especially to boost electric vehicles. While subsidies play a crucial early role in market creation, they can become an increasingly blunt and expensive instrument. They can strain public finances, deliver uneven uptake across income groups, and give limited certainty to makers and infrastructure providers on pace and scale of transition.

What is now required is a shift toward more robust supply-side regulations (SSRs), policies mandating outcomes rather than incentivising voluntary uptake. International experience shows such norms can provide strong, predictable investment signals across vehicle and charging supply chains, while offering more certainty on emissions goals being met. Key instruments include: Creating demand by phasing out internal combustion engine vehicles (ICEVs).

A credible ICEV phase-out timeline can create sustained and predictable demand for zero-emission vehicles (ZEVs), enabling makers, suppliers and charging providers to plan investments with confidence. This time-bound roadmap can be drawn with interim milestones across vehicle segments.

Increasing the supply of ZEVs through tighter fuel efficiency standards: Tightening fuel efficiency standards is essential to ensure new vehicles entering the fleet become progressively cleaner and more efficient over time. These norms should be strengthened to drive improvements in efficiency and raise the share of low- and zero-emission vehicles, in line with national climate goals. They should also be extended beyond passenger vehicles to include freight so that efficiency gains extend to one of the fastest-growing and most energy-intensive parts of transport sector.

Ensuring transition certainty through zero-emission sales mandates: Sales mandates can provide a clear pathway to the transition to zero-emission vehicles, ensure accountability, and reduce uncertainty for industry and investors alike. These mandates can be structured with clearly defined interim targets for manufacturers, culminating in 100% ZEV sales by a specified end year.

An ICCT study found that, in India, fuel efficiency standards and zero-emission vehicle sales needs could complement existing policy measures to deliver durable economic, industrial, and environmental benefits at relatively low fiscal cost to the government.

#### **SSRs are valuable**

From an air quality perspective, SSRs are especially valuable. By shaping what manufacturers supply, they can help to align market behaviour with public health goals, ensure cleaner technologies scale at the required pace, and prevent policy backsliding as vehicle demand continues to grow.



More crucially, SSRs reduce the risk that cleaner technologies merely coexist with continued growth in internal combustion vehicles, a dynamic that dilutes air quality gains and delays health benefits. Evidence shows where binding SSRs are in place, emissions cuts are deeper, more predictable, and more resilient over time.

Cleaning India's urban air will require more than a fragmented approach reliant on incentives that can be diluted, withdrawn, or reversed. Placing transport reform at the center of air quality strategy, anchored in regulatory instruments, can provide meaningful, long-term change.

#### TOOTHLESS BAN: SINGLE-USE PLASTIC RULES 84% OF SURVEYED SITES IN 4 CITIES

About 84% of 560 locations surveyed across four cities — one each in eastern, north-eastern, northern, and western India — continue using single-use plastic items banned across the country three years ago.

Toxics Link, a New Delhi-based environmental research and advocacy organisation, conducted a field study at specific locations across Bhubaneswar, Delhi, Guwahati, and Mumbai between April and August 2025. Its report, released on Wednesday, highlighted major gaps in enforcement and called for nationwide urgent action to strengthen implementation.

The survey teams assessed the on-ground effectiveness of the ban across a wide range of establishments, including street vendors, juice stalls, markets, small restaurants, grocery stores, religious sites, railway platforms, and organised retail spaces.

According to the study, Bhubaneswar recorded the highest availability of banned single-use plastic items at 89% of the survey locations, closely followed by Delhi at 86%, Mumbai at 85%, and Guwahati at 76%.

"The continued presence of banned plastic items in a majority of locations suggests that enforcement remains inconsistent. Unless implementation improves and the supply of these products is controlled, the ban will not effectively address plastic littering and pollution," Ravi Agarwal, director of Toxics Link, said.

#### High customer demand

The study found widespread presence of banned single-use plastic items with sectoral variations: thin plastic carry bags, disposable plastic cutlery, cups, plates, and straws were widely found across informal markets and small commercial establishments.

Organised malls and larger retail outlets showed significantly better adherence to the ban compared to informal markets dominated by small vendors. The latter attributed it to a high customer demand and a higher cost of alternatives.

About 91% of the vendors across the survey sites said customers asked for carry bags. Interactions with vendors also revealed that 55% customers brought their own bags, but many customers still expect vendors to provide free carry bags.

Satish Sinha, the associate director of Toxics Link, said that customer preferences partly influence vendors' reluctance to transition from plastics to alternatives, including paper cups and plates, wooden cutlery, steel utensils, aluminium foil containers, bagasse plates, cloth bags, and thicker reusable plastic bags above 120 microns.



“Customers perceive disposable plates and cutlery to be more hygienic than reusable items. Our survey found that this perception, along with the cost advantage of single-use plastics, continues to drive their use among small and local vendors, although the intensity of this preference varies between rural and urban areas,” he said.

#### **Stronger steps sought**

The report called for stronger national action by all stakeholders — government, single-use plastic manufacturers, retailers, and consumers — in line with the discussions at the Intergovernmental Negotiating Committee on Plastic Pollution held in Geneva, Switzerland in 2025.

It recommended more robust enforcement and monitoring mechanisms with regular inspections, coordinated action among regulatory agencies, and consistent penalties to ensure compliance with the ban on single-use plastics.

### **WHY IS CHENNAI’S MICROPLASTIC PROBLEM BIGGER THAN IT LOOKS?**

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

Microplastics, especially nylon fibres, seem to be present rather sparsely in Chennai’s beach sediments but could still wreak long-term ecological damage, new research has cautioned. A study by researchers at V.O. Chidambaram College in Thoothukudi examined the abundance, sources, and ecological risks of microplastics from beach sediment samples from 15 sites along the Chennai coast. The findings show fibres dominating, with most particles smaller than 1000 m.

#### **Why does low abundance not mean low risk?**

“This study is important because it shows that microplastics are already present in Chennai’s beach sediments, even if we don’t always see them,” Sekhar Selvam, senior assistant professor at the Department of Geology, V.O. Chidambaram College, Thoothukudi, said. “We found that most of the microplastics are nylon fibres, which are more harmful than many other plastics.”

In other words, even though Chennai’s beaches have fewer microplastics than many global ones, the risk to marine life remains significant.

An additional insight from the study is the disconnect between abundance-based assessments and risk-based evaluations, Shaji Erath, professor of geology at the University of Kerala, Thiruvananthapuram, said. Traditional monitoring often focuses on microplastic counts alone.

However, the study has shown that polymer type, shape, and aging characteristics are equally, if not more, important in determining ecological risk, he added.

#### **What are the ecological concerns?**

Ecological concerns in the study are chiefly centred on marine life and coastal ecosystems, Dr. Selvam said. Small organisms living in beach sand, such as worms, crabs, and shellfish, easily ingest the small plastic fibres, which can go on to block or injure their digestive tracts. Toxic compounds in plastics can also enter and poison their bodies.

According to Dr. Erath, besides feeding by marine microorganisms, plankton, and marine animals, hazardous polymers such as nylon pose higher ecological risks due to their persistence, chemical additives, and capacity to adsorb pollutants.



Fibre-shaped microplastics in particular can alter habitats by modifying the structure of sediments, affecting the benthic — or bottom layer — of seas and the microbial communities there, he explained. There could also be prolonged environmental exposure and long-distance transport of microplastics, highlighting the transboundary nature of microplastic pollution.

#### **How do human activities contribute?**

Most microplastics found by the Chennai study team were clearly linked to human activities, according to Dr. Selvam. These include fishing, where damaged nets and ropes shed plastic fragments that break up into microplastics; synthetic clothes, which release minuscule fibres when they are washed; tourism and beach use; and urban sewage and stormwater drains that carry plastics into the sea.

After reaching the coast, they reenter human bodies via seafood contaminated by microplastics, among other pathways. Seafood in particular can ferry both harmful chemical substances and disease-causing bacteria and other microorganisms into the body, causing tissues to become inflamed and affecting the hormonal and immune systems over longer periods.

#### **Is it too late to act?**

Right now, microplastic pollution levels are not so extreme in Chennai and better waste management, responsible fishing practices, and public awareness can still prevent a much bigger problem in the future, according to Dr. Selvam.

In the final analysis, the research has reinforced the need for timely policy-driven interventions, including better solid waste management, recycling of fishing gear, promotion of biodegradable alternatives, and public awareness, Dr. Erath said.

### **CAUVERY BASIN TO FACE DRY SPELL UNTIL 2050, SAYS STUDY**

While a warming climate is expected to significantly increase the flow of most major Indian rivers, the Cauvery basin stands out as an exception. The river faces a potential “near-term decline” of approximately 3.5% of its waters between 2026 and 2050, even as its northern counterparts brace for floods, according to a study by researchers at the Indian Institute of Technology (IIT), Gandhinagar, published in the peer-reviewed journal *Earth's Future*.

Given the fraught history of Cauvery water sharing between Karnataka and Tamil Nadu, particularly in years of deficit rainfall, the study suggests that despite climate models projecting increased rainfall from global warming in India in the decades ahead, the Cauvery might not benefit. In such a situation, river interlinking projects, such as the proposed Godavari-Cauvery link project, might be necessary, the researchers say.

The study finds that the Cauvery experienced a 28% decline in streamflow between 1951 and 2012, based on data from Kollegal which, one of the authors told *The Hindu*, “well represented” actual flows in the Cauvery.

While the study is based on a modelling study and is reliant on an extrapolation, it attempts to reduce errors that can creep in from blindly applying climate models to predict the impact of global warming on Indian rainfall. To do that, the authors use a novel statistical framework and base their analysis on actual river flows between 1951 and 2012, measured at nine stations



representing nine major river basins, and then extrapolates the data using a “constrained modelling” approach.

The nine rivers are the Cauvery (measured at Kollegal), the Ganga (Farakka), Brahmaputra (Bahadurabad), Indus (Bhakra), Godavari (Polavaram), Krishna (Kurundwad), Mahanadi (Basantpur), Narmada (Mandleshwar), and Tapi (Burhanpur).

Decades of failed negotiations on water sharing between Karnataka and Tamil Nadu led to the establishment of the Cauvery Water Disputes Tribunal (CWDT) in 1990, which took 17 years to reach a final order in 2007. The tribunal calculated total available water at 740 thousand million cubic (tmc) feet in a normal year, and allocated shares accordingly. The 2018 Supreme Court verdict allocated 404.25 tmcft to Tamil Nadu and 284.75 tmcft to Karnataka, while also declaring the Cauvery a national asset.

In 2023, Tamil Nadu requested 24,000 cusecs a day citing drought, but Karnataka refused, citing its water shortage, leading to protests in both States.

### **Water shortage**

Water challenges apart, the study highlights a persistent problem in climate science: while models agree that India will get warmer, they vary widely on exactly how much rain will fall. By applying observational constraints, the researchers identified that only eight out of 22 models accurately captured the seasonality of the Indian monsoon.

The source models used are the CMIP6 (Coupled Model Intercomparison Project Phase 6), which are the latest generation of global climate models used by scientists to project future climate change

Unconstrained models show a 5% increase in the Cauvery in the near term, the researchers said, as well as a 25% increase in the Indus, 8% in the Ganga, and 16% in the Krishna. When projections were restricted to these ‘constrained’ or more reliable models, the certainty of a wetter future for most rivers increased, but the outlook for the Cauvery was grim, with the basin facing “near- and mid-term water shortages”.

“Raw outputs have biases because of model resolution, simplified physics that global climate models use. To correct these biases and show future trends based on what is actually observed, we use constrained models,” Mr. Chuphal, the lead author of the study, told *The Hindu*. “As far as the Cauvery is concerned, it implies that water sharing could get tougher.”

## **GOVT TO SCRUTINISE ALL JAL JEEVAN PROJECTS COSTING RS 100-CR PLUS**

Amid concerns over the inflated cost of works undertaken in the first phase of Jal Jeevan Mission (JJM), the Centre is set to undertake a rationalisation exercise by scrutinising projects costing over Rs 100 crore before funds are released to states, The Indian Express has learnt.

### **Key Takeaways:**

— The Jal Jeevan Mission aims to provide potable water of at least 55 litres every day to every person through functional tap connection to every rural household. Originally scheduled to be completed by 2024, the mission deadline has now been extended to 2028.



— According to sources, the Union Ministry of Jal Shakti, the nodal ministry for implementation of the JJM, informed states about the proposed cost rationalisation and apportionment on March 14 – four days after the Union Cabinet approved extension of the JJM from 2024 till 2028, with an additional outlay of Rs 1.51 lakh crore.

— The ministry informed the states that projects costing Rs 100 crore and above and schemes addressing urban/sectoral water demand or higher service levels shall be scrutinised by the Central Public Health & Environmental Engineering Organisation (CPHEEO). The CPHEEO is an organization under the Union Ministry of Housing and Urban Affairs.

— The Centre has also informed the states that no Central assistance shall be provided for retrofitting schemes. Any pending liabilities under such schemes are to be met from the state government's financial resources, the ministry told the states.

— After the Union Cabinet approved an additional Rs 1.51 lakh crore allocation, the scheme will now have an overall outlay of Rs 8.70 lakh crore till 2028. Of this, the Centre's outlay will be Rs 3.59 lakh crore, including Rs 2.08 lakh crore allocated in 2019.

— The Centre has laid down four conditions for states to receive funds, in an attempt to put safeguards amid concerns over irregularities in the implementation of the JJM.

— “The release of Central funds under JJM 2.0 will be strictly conditional upon States/UTs meeting four mandatory compliance requirements. These are: signing an MoU (Memorandum of Understanding); creation of Sujal Gaon IDs to ensure complete digital mapping of all rural water supply schemes; timely financial reconciliation, and notification of state operation and maintenance (O&M) policies,” said an official.

— Till Friday, eight states, including Uttar Pradesh, Madhya Pradesh, Rajasthan, Maharashtra, and Gujarat, signed the MoU.

**Do You Know:**

— Entry 17, State List (List II), Seventh Schedule of the Constitution of India says, “Water, that is to say, water supplies, irrigation and canals, drainage and embankments, water storage and water power subject to the provisions of entry 56 of List I.” It means that states have the authority to legislate on water-related issues such as irrigation, water supply, canals, and embankments within their territory.

— Entry 56, (List I), Seventh Schedule of the Constitution of India provides, “Regulation and development of inter-State rivers and river valleys to the extent to which such regulation and development under the control of the Union is declared by Parliament by law to be expedient in the public interest.” It gives the Union Government power for the regulation and development of such rivers if declared necessary by Parliament.

**HEATWAVES TO HAILSTORMS, HOW MARCH WEATHER HAS TURNED ERRATIC**

This year, sweltering and high temperatures in Jammu & Kashmir and Punjab, unusual heatwaves in Himachal Pradesh, and dry and hot weather across Gujarat and Maharashtra marked the beginning of March — a month that climatologically sees a slow transition from winter to summer.



**Key Takeaways:**

- Since last week, however, the heat has been replaced by thunderstorms, hailstorms and rain that have cooled down temperatures.
- Western Disturbances are rain-bearing wind systems, originating beyond Afghanistan and Iran, that pick up moisture from the Mediterranean Sea, the Black Sea, the Caspian Sea and the Arabian Sea as they move eastward towards India. Since November last year, the Western Disturbance streams affecting India have been subdued in both frequency and intensity, directly affecting rainfall and snowfall. Since November last year, the Western Disturbance streams affecting India have been subdued in both frequency and intensity, directly affecting rainfall and snowfall.
- But this trend was broken last week when two successive, intense Western Disturbances (March 13 and 18) crossed northwest, north and eastern India.
- The severe weather — thunderstorm, lightning, hailstorms, short but intense rain spells (over 115 mm in 24-hours) and snowfall — occurred across the western Himalayas, east and northeast India and some parts of southern India. Neighbouring Pakistan, too, experienced severe weather a couple of days ago.
- Officials at the India Meteorological Department (IMD) attributed this to not only Western Disturbances but also the prolonged presence of a cyclonic circulation in the lower tropospheric levels. Besides, there were also strong south-westerly or southerly winds that pumped in moisture from the Bay of Bengal over the region. This led to a confluence of wind over the central and northwest India regions. Weather experts at IMD said similar weather was reported in March 2023.

**Do You Know:**

- A combination of weather factors around mid-March resulted in hailstorms across the country. First, Western Disturbances trigger rain (and snowfall in higher altitudes) in the northwest, north, northeast and some parts of eastern India during the non-monsoon months (June-September). This also holds true for early March, when the effect of winter is still lingering.

March is also the most favourable month for hailstorms and thunderstorms. Temperatures begin to rise after mid-March and, under the right weather conditions, can trigger thunder, lightning and intense rainfall.

- In eastern India, local winds known as Nor'westers (Kalbaisakhi in West Bengal) can lead to the sudden development of intense storms, heavy rain and thunder during this time.
- A heatwave is basically a period of unusually high temperatures over a place. Thus, the threshold to declare a heatwave depends on the temperatures normally seen in that area in that time of the year.
- According to the IMD, a heatwave is declared when the “maximum temperature of a station reaches at least 40 degree C or more for plains and at least 30 degree C or more for hilly regions.”
- Based on departure from the normal temperature, a heatwave is when the departure is 4.5 degree C to 6.4 degree C, and a severe heatwave is declared when the departure is more than 6.4 degree C.



- Based on actual maximum temperature, the IMD says, a heatwave exists when the maximum temperature is greater than 45 degree C, and a severe heatwave when the temperature is over 47 degree C.
- Western disturbances are storms that originate in the Mediterranean region. They bring easterly winds to Delhi, along with a spike in moisture and increased clouding or rainfall. They are regular features in winter. In monsoon and summer, they have more tropical characteristics and bring rain and thunderstorms. In winter, they bring rain and snow over the hills, and more moisture to the plains. The cloud cover results in higher minimum temperatures at night and lower day-time or maximum temperatures.

### RS 2.38 LAKH CR-DEFENCE PUSH: DAC CLEARS 5 S-400 MISSILE SYSTEMS FROM RUSSIA, TRANSPORT AIRCRAFT

The Defence Acquisition Council (DAC) on Friday cleared a proposal to procure five additional S-400 long range surface-to-air missile systems from Russia, months after the S-400s reportedly demonstrated their capability during Operation Sindoor.

#### Key Takeaways:

- The DAC also cleared several other key acquisition proposals, including the procurement of medium transport aircraft and remotely piloted strike aircraft for the Indian Air Force, as well as armoured piercing tank ammunition and Dhanush gun systems for the Army, among others. The proposals are together worth about Rs 2.38 lakh crore.
- In 2018, India had signed a \$5.43 billion deal with Russia to buy five squadrons of the S-400s. While three squadrons have been delivered, and deployed on the borders facing Pakistan, the two remaining squadrons are likely to be delivered later this year.
- The induction of the medium transport aircraft, which will replace the ageing transport fleet of the IAF's An-32 and Il-76 aircraft, will meet the strategic, tactical and operational airlift requirements of the Services, the MoD said.
- The DAC also cleared the overhaul of the Su-30 aero engine and its aggregates, which, the MoD said, will increase the service life of the aircraft and fulfil the IAF's operational requirements.
- For the Army, the DAC approved proposals to procure the air defence tracked system, armoured piercing tank ammunition, Dhanush gun system, high capacity radio relay and runway independent aerial surveillance system.
- The Dhanush gun system will enhance the artillery's capabilities to engage targets at longer ranges in all terrains with enhanced lethality and accuracy, the MoD statement said, adding that the air defence tracked system will provide real-time air defence control and reporting capability, and the high capacity radio relay will provide reliable and fail-proof communication.
- The MoD also signed contracts worth Rs 858 crore, for procurement of Tunguska air defence missile systems and inspection (depot level) of P8I long-range maritime reconnaissance aircraft on Friday.



**Do You Know:**

- The DAC, headed by Defence Minister Rajnath Singh, is the key defence body that grants Acceptance of Necessity (AoN) for all big-ticket capital procurements. While the AoN is the first step in the defence procurement process, obtaining it may or may not lead to a final order.
- The S-400 Triumf, which NATO calls it the SA-21 Growler, is a mobile, surface-to-air missile system (SAM) designed by Russia. Made operational in 2007, it is seen as the most dangerous operationally deployed modern long-range SAM in the world, better than the US-developed Terminal High Altitude Area Defense system (THAAD).
- Put simply, its job is to detect any aerial threat in the area it has been tasked with protecting, calculate the threat's path, and then dispatch a suitable missile to counter the threat.
- The S-400 has a multifunction radar, autonomous detection and targeting systems, anti-aircraft missile systems, launchers, and a command and control centre. It can be deployed within five minutes — US-made systems often take longer to deploy — and is capable of firing three types of missiles to create a layered defence.

**NAVY'S STATE-OF-THE-ART STEALTH FRIGATE *TARAGIRI* TO BE COMMISSIONED ON APRIL 3**

Indigenous stealth frigate *Taragiri*, equipped with cutting-edge weapons, including supersonic missiles, will be commissioned into the Indian Navy on April 3, the Defence Ministry said in a press release on Saturday. The ceremony will be presided over by Defence Minister Rajnath Singh in Visakhapatnam, and “will serve as a powerful testament to the nation’s journey toward becoming a completely self-reliant naval power”.

As the fourth potent platform of the Project 17A class, “*Taragiri* is not merely a ship; it is a 6,670-tonne embodiment of the ‘Make in India’ spirit and the sophisticated engineering capabilities of our indigenous shipyards,” the release read. *Taragiri*, the fourth ship of Nilgiri-class and the third one built by Mazagon Dock Shipbuilders Ltd, was delivered to the Navy on November 28 last year, marking a milestone in achieving self-reliance in design and construction.

This state-of-the-art frigate reflects a “quantum leap” in naval design, stealth, firepower, automation and survivability, and is a symbol of ‘aatmanirbharta’ in warship building, the Navy had then said.

With indigenous content exceeding 75%, the ship highlights the maturity of a domestic industrial ecosystem that now spans over 200 MSMEs, and contributing to the government’s *Aatmanirbharta* initiative, it said.

**INDIA MUST USE THE AYUSH OPPORTUNITY**

The 2026-27 Union Budget and India’s new Free Trade Agreement (FTA) with the European Union (EU) signals Ayurveda’s ambitious leap into the global mainstream. The Ayurveda, Yoga and Naturopathy, Unani, Siddha, and Homoeopathy (AYUSH) Ministry’s budget has nearly doubled in the past five years, reaching ₹4,408 crore this year. Further, Finance Minister Nirmala Sitharaman has announced three new All-India Institutes of Ayurveda, aiming to set top standards for traditional medicine, similar to how AIIMS leads modern medicine in India. These institutes will not just treat patients, they will teach and conduct advanced research as well. The Budget also

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



turbo-charges the National AYUSH Mission, raising its funding by 66% to modernise dispensaries, establish AYUSH clinics inside government hospitals, and upgrade drug-testing laboratories.

Together, these measures reflect an effort to bring traditional medicine into the mainstream health ecosystem rather than treat it as an alternative silo.

### **Global reach**

If the Budget gives Ayurveda depth within India, the India-EU FTA gives it global reach. In EU countries that don't specifically regulate traditional medicine, the trade deal allows Indian AYUSH practitioners to provide their services using qualifications obtained in India. It guarantees that Indian companies can open Ayurvedic clinics across Europe without the fear of sudden policy reversal. It also sets up a system where Indian safety certifications could eventually be accepted in Europe, which means that products approved in India might not need extra testing.

However, this policy is also a moment which will test whether the country can merge faith in heritage with the discipline of evidence. For this is not just an economic expansion; it is a structural repositioning of Ayurveda within India's health system and the global market. When the alternative moves from local clinics to international markets, it enters regulatory and scientific arenas that demand proof. These treatments, understood as Traditional, Complementary, and Alternative Medicine (TCAM), will be evaluated within stringent regulatory and vigilance frameworks. This is precisely the moment when regulatory harmonisation becomes essential. If AYUSH products are to circulate in EU markets, they must meet international standards of safety, manufacturing quality, and claims regulation. Global ambition demands scientific accountability.

### **Need for scientific evidence**

If claims outpace evidence, India risks legal disputes, reputational damage, and the reinforcement of stereotypes about 'unscientific traditionalism.' For Ayurveda and other AYUSH systems to enter the global mainstream credibly, they must submit to rigorous, independent, and transparent scientific evaluation conducted by third-party research organisations. At present, many assessments are funded, designed, or overseen by the same Ministry that promotes AYUSH, creating a structural conflict of interest. Global credibility requires independently funded clinical trials, transparent methodologies, peer-reviewed publications, and the willingness to publish negative findings.

A common defensive move in debates around traditional medicine or cultural knowledge is to frame scientific scrutiny as colonial bias or Western epistemic dominance. Certainly, the history of colonial medicine in India involved the marginalisation and delegitimisation of local systems of healing. While that history should not be forgotten, it does not follow that all demands for empirical evaluation are acts of epistemic domination. Demanding evidence is not cultural betrayal, and scientific evaluation does not diminish tradition.

### **Coexisting systems**

Furthermore, TCAM systems endure not simply because of cultural loyalty, but because they carry different imaginations of the body, health, and illness. To engage with TCAM seriously is to recognise that they are not merely collections of remedies but coherent epistemologies. Systems such as Ayurveda are organised around ontological commitments about what the body is, how it is constituted, and how disorder emerges. The body in Ayurveda, for instance, is not a collection of discrete organs but an interdependent system embedded in environment, diet, season, and



social life. Health is a state of equilibrium across physiological, psychological, and ecological registers, and illness is a disturbance in patterned relations rather than a discrete lesion.

This stands in contrast to modern medicine, which has historically been grounded in anatomical localisation. Biomedicine excels at identifying specific causal mechanisms and intervening with precision at targeted sites. TCAM systems, by contrast, often operate through systemic logics. But the question is not biomedicine versus TCAM. The conceptual frames in TCAM do not need to replace biomedicine to be valuable. They can function as counterpoints that expand questions about what it means to be healthy. They offer alternative models of embodiment — models in which the body is ecological and dynamic.

Thus, the goal is not substitution but dialogue. In that dialogue lies the possibility of strengthening scientific inquiry across the spectrum of care. Therefore, public investment should fund intellectual openness and scientific freedom. Global ambition will be sustained not by assertion, but by evidence, transparency and the courage to be rigorously examined.

#### CENTRE'S 100-DAY CAMPAIGN AGAINST TB IS A STEP IN THE RIGHT DIRECTION

Eight years ago, the government announced its intent to eliminate tuberculosis in the country by 2025. Though India could not meet the deadline, it has taken appreciable strides in slowing the incidence of this bacterial disease. Today its healthcare system diagnoses more than 80 per cent of the estimated cases, a far cry from 2015 when close to 50 per cent of those infected by TB fell outside the radar. However, the disease continues to present a formidable challenge. Close to a lakh cases go undetected in the country, and chances of the infection spreading remain high. That's why the Centre's 100-day campaign against TB, which began on Tuesday, is a step in the right direction. Public health programmes against difficult contagions require periodic bursts of urgency focused on high-risk areas, because national figures can often mask deeply localised epidemics. Chhattisgarh's 100-day anti-TB project recognised this imperative — it eliminated the disease in more than 4,000 gram panchayats between December 2024 and March 2025.

Over the next 100 days, healthcare workers will screen those living in 1.58 lakh villages. They will also reach out to vulnerable people such as those living with HIV, diabetes and residents of high-density areas. The government has also pushed for expediting its Rs 1,000 monetary support for nutrition to TB patients. The thrust on timely payments is a recognition of one of the shortcomings of the anti-TB programme. Reports have shown that delays in processing the payment have rendered the nutritional support ineffective in several parts of the country. In contrast, the success of the anti-TB programme in Chhattisgarh and Puducherry owes much to timely cash transfers to the undernourished.

The government would do well to treat its latest drive as a catalyst for improved diagnostics, regular follow-ups and better community engagement. Institutionalising the learnings of the 100-day campaign could go a long way in addressing the most difficult TB-related challenge — the disease's multidrug-resistant version. This virulent form of TB occurs largely because of the mismanagement of the disease. TB care is exacting for patients as well as caregivers — that's why patients continue to drop therapy mid-course or do not take the correct dosage. The 100-day anti-TB campaign needs to lay the ground for improved support systems.



## SCIENTISTS INVESTIGATE HOW TB BACTERIA HIDE, ADAPT AND SURVIVE

Mycobacterium tuberculosis (Mtb), the microbe that causes tuberculosis (TB), actively reshapes its outer fat membrane to slip past immunity shields, survives stress and even rewires host cells to gain entry. A new study by the Indian Institute of Technology (IIT) Bombay, has found a way to detect these changes, which can help in understanding why TB bacteria are becoming increasingly multidrug-resistant.

### Key Takeaways:

- The research led by Dr Shobhna Kapoor, Department of Biotechnology/Wellcome Trust India Alliance Intermediate Fellow at IIT-B, raises the possibility of spotting hard-to-diagnose infections by not just looking at proteins but fat.
- One reason TB is difficult to control is that the bacteria can enter a resting state called latent or dormant TB after the initial infection. They stay alive but are inactive, sometimes for many years. People with latent TB have no symptoms and cannot spread the disease. However, the bacteria can become active again if the immune system weakens, such as with another infection or HIV or use of immunosuppressants.
- Most antibiotics work only on TB bacteria that are active and dividing; therefore, dormant TB cells, which grow very slowly or not at all, can survive treatment and persist in the infected person and even acquire antibiotic tolerance.

### Do You Know:

- TB is caused by an organism called mycobacterium tuberculosis, which mainly affects the lungs, but can also impact other parts of the body. TB spreads through the air when an infected individual coughs, sneezes, or speaks.
- In 2018, Prime Minister Narendra Modi announced India's ambitious target of eliminating TB by 2025, five years ahead of the global target. Although there has been a consistent decline in the estimated number of TB cases — as well as the rate of TB cases per 100,000 population — India is nowhere close to its target of eliminating the bacterial disease by 2025. Various efforts have been undertaken to eliminate TB, such as:
  - In India, the government offers free medicines for TB treatment, which is essential as the medicines can be expensive and the therapy may continue for as long as two years.
  - An online Ni-kshay portal has been set up to track the notified TB cases. The government also launched a community engagement program where Ni-kshay Mitras can adopt TB patients and provide them with monthly nutritional support.
- While TB elimination is defined as less than one case per million population, the WHO End TB strategy targets an 80% decline in new TB cases and 90% decline in TB deaths by 2030 as compared to the baseline year of 2015.



## INDIA STUDY MAPS ANTIBIOTIC RESISTANCE IN FOUR CITIES, FINDS BACTERIA USING SIMILAR SURVIVAL STRATEGIES

A first-of-its-kind study mapping antimicrobial resistance (AMR) in urban wastewater across four Indian metros has found that bacteria, despite differing by city, are evolving similar ways to evade antibiotics—raising concerns for public health surveillance.

### Key Takeaways:

— The landmark study by researchers from the CSIR-Centre for Cellular and Molecular Biology (CCMB), Hyderabad, and partner institutions, published in its latest edition in the peer-reviewed journal Nature Communications, provides the first comprehensive AMR map in Indian urban wastewater.

— While antimicrobial resistance (AMR)—bacteria’s growing resistance to antibiotics—is killing millions of people worldwide every year, data on its local prevalence in India is largely missing, the researchers note.

— Conducted between March 2022 and March 2024, the study analysed 447 samples from 19 sites across Delhi, Mumbai, Kolkata, and Chennai. The findings reveal a complex landscape—different bacteria are abundant in different cities, but they follow similar mechanisms to resist antibiotics.

— The researchers used a shotgun metagenomics approach to examine bacterial genes in detail, allowing them to estimate how bacteria develop resistance.

— According to the study, bacteria become resistant due to certain genes. These genes either help them build stronger cell walls that antibiotics cannot penetrate, enable them to metabolise or expel antibiotic molecules, or even destroy these molecules. Bacteria can share these genes not only with their offspring but also with neighbouring microbes.

— The study finds that microbial communities shift based on local environmental factors. For example, *Klebsiella pneumoniae* is more abundant in Chennai and Mumbai, while *Pseudomonas aeruginosa* is more prevalent in Kolkata. However, the genes conferring resistance to various antibiotics remained consistent across all four metro cities.

— Antibiotics belong to different chemical classes, such as tetracyclines, beta-lactams, and macrolides. The researchers found that bacteria can share resistance genes against tetracyclines and beta-lactams more easily than against macrolides.

— Beyond identifying threats, the researchers propose wider use of wastewater-based pathogen surveillance across the country, outlining a practical path forward for public health despite infrastructural challenges.

### Do You Know:

— According to WHO— “ Antimicrobial resistance (AMR) is one of the top global public health and development threats. It is estimated that bacterial AMR was directly responsible for 1.27 million global deaths in 2019 and contributed to 4.95 million deaths.”



— AMR has emerged as a global concern as it transcends the political boundaries and poses a threat to all of humanity. Animals and plants are also susceptible to diseases caused by pathogens, making them vulnerable to AMR.

— The irrational excessive use of antimicrobial drugs is the key reason for the rise of AMR as it leads to the creation of resistant or extremely resistant superbugs, which can circulate in hospitals, through drinking water, or sewers.

### TIGER SKINS, BEAR BILE, LIZARD OIL: PUNJAB DISTRICTS EMERGE AS 'WILDLIFE CRIME HOTSPOTS' DESPITE SCANT FOREST COVER

Punjab, one of India's least forested States, is challenging the perception that wildlife crimes are confined to dense jungles and protected areas.

A new study has identified emerging wildlife crime hotspots in the agrarian State, whose forest cover is less than 3.6% of its geographical area of 50,362 sq. km. The findings underline how illegal hunting, trafficking, and trade networks adapt to a human-dominated landscape by exploiting gaps in monitoring and enforcement.

Tarn Taran-based citizen scientist Navdeep Sood and Rohan Kumar of Lovely Professional University in Phagwara are the authors of the study, published in the latest issue of the *Journal of Threatened Taxa*.

Their study documents 32 incidents of wildlife crime in Punjab between 2019 and 2024, affecting thousands of animals, many endangered. Apart from wild boars, leopards, tigers, sambars, freshwater turtles, and Tibetan antelopes, the trafficked animals include marine species.

The researchers warn that these incidents, based on reported wildlife crimes, represent the tip of the iceberg.

The researchers said wildlife crime in Punjab is not randomly distributed but highly concentrated. Using spatial analysis, they found that 1% of the State's area – roughly 509 sq. km – accounts for extreme-intensity crime hotspots, while nearly 30% falls in low-to-moderate intensity zones.

An analysis of the recorded incidents revealed that wildlife crimes were concentrated in the Shivalik foothills and within the districts of Amritsar, Hoshiarpur, Ludhiana, Jalandhar, Pathankot, Rupnagar, SAS Nagar, and Tarn Taran.

#### **Bushmeat trade**

The study identified wild boar as the most frequently targeted species, often linked to bushmeat trade and illegal transport networks. In one case, 127 live and dead boars were seized. The seizure of 201 shahtoosh shawls during the study period suggested the killing of hundreds of Tibetan antelopes, exposing connections to international trafficking chains. The Tibetan antelope is found in the Qinghai and Xinjiang regions of China and the Ladakh and Karakoram regions of India.

Similarly, the presence of marine products in a landlocked State like Punjab signalled long-distance smuggling networks. The researchers noted that transit hubs, including Amritsar and (border point) Attari, are increasingly being flagged as critical nodes in illegal wildlife trade routes.



According to the study, crime methods used range from nets, clutch-wire snares and metal traps to firearms and trained dogs, pointing to a mix of opportunistic poaching and organised crime. It also noted the recovery of wildlife derivatives like tiger skins, bear bile, coral, and lizard oil, indicating sophisticated supply chains that extend far beyond Punjab.

#### NEW BUTTERFLY SPECIES RECORDED IN ARUNACHAL NAMED AFTER ZUBEEN

A new species of butterfly recorded in a forest of Arunachal Pradesh's Leparada district has been named after Zubeen Garg, the cultural icon of Assam, whose death on September 19, 2025, triggered a storm.

The researchers — Roshan Upadhaya, a scholar at Punjab's RIMT University, and Kalesh Sadasivan of Travancore Natural History Society — have proposed Basar Duke as the common name for *Euthalia zubeengargi*, which was observed during field surveys conducted in 2025. The former is an Arunachal police constable.

Their findings in semi-evergreen forests at elevations of 600-750 metres appeared in the latest issue of *Entomon*, a quarterly journal published by the Association for Advancement of Entomology, an Indian non-governmental organisation.

##### Found in forests

Despite months of observation, the researchers documented only two male individuals, one collected specimen and another photographed in the wild, indicating that the species may be rare or highly localised. "The butterfly belongs to the genus *Euthalia*, a group commonly found across South and Southeast Asia. Members of this group are typically seen in forested habitats and are known for their earthy brown wings marked with pale spots," Mr. Upadhaya said.

#### LAND ENCROACHERS OUT, NILGIRI TAHRs IN

In 2024, the Chokramudi hills under the Bison Valley panchayat near Munnar in Idukki, Kerala, were known primarily as a hub of encroachers. However, just two years later, the landscape had been transformed into a thriving natural habitat for the endangered Nilgiri tahrs.

The crisis began when an Adimaly native purchased 14.69 acres of land in the ecologically fragile Chokramudi hills, attempting to divide and sell the land into over 60 plots. The encroacher constructed an illegal road, felled numerous trees, and built a check dam on the hillside. In protest, downstream residents of Bison Valley formed the "Chokramudi Protection Council".

Two Special Investigation Teams uncovered large-scale encroachment of government land and the massive destruction of Neelakurinji plants.

Following these reports, the Revenue Department cancelled the 13.69 acres of land's title deeds in March 2025 and reclaimed the area. By August 2025, authorities cancelled the title deed for an additional 1.05 acres and seized a resort built on the encroached land. Since the government takeover, the absence of unregulated tourism has allowed nature to rebound.

Botanist Jomy Augustine said that the hills have become an active habitat for the Nilgiri tahrs and Neelakurinji. "The climate and grasslands here are most favourable for the tahr," he said. The hills are set to witness a massive flowering of Neelakurinji.



## HOW THE BRITISH SHAPED INDIA'S EDUCATION SYSTEM

Education in India underwent a major transformation in the nineteenth century during British rule, particularly after the intervention of Thomas Babington Macaulay in 1835. To understand the impact of Macaulay's policies, it is important to first look at the nature of education in India before colonial reforms, and then examine what changed afterwards.

Before the British introduced their new education system, India already had a widespread network of local schools. These schools were known by different names in different regions. In North India, they were often called pathshalas, while in Bengal they were also called pathshalas or tols. In South India, similar institutions existed in villages and temple towns. These schools were usually small and locally supported. Teachers were paid by the community, sometimes through small fees from families or through donations of grain and services.

The curriculum in these schools was practical. Students learned reading, writing, and arithmetic. Arithmetic was particularly important because many students came from merchant, artisan, or farming communities that needed accounting skills. In trading regions, students learned methods of bookkeeping, calculation of interest, and record keeping.

In some schools, religious texts were also taught. For example, the madrasa attached to mosques, and sponsored by Muslim rulers, and the gurukuls attached to mathas or Hindu monastic orders, and sponsored by Hindu rulers, imparted religious teachings.

### **Caste and pre-colonial education**

Early British surveys provide valuable information about this system. One important report was prepared in the 1820s in the Madras Presidency under Governor Thomas Munro. The survey documented thousands of village schools and recorded the caste background of students. Interestingly, many of the students were from communities classified by the British as Shudras, including cultivators and artisans. Brahmins were present but often formed a minority in several districts.

But the British understanding of the caste system in India was simplistic. While there was a clear four-fold division of varna in North India, South India had only two varna: the Brahmin and Shudra. The Shudra were classified into left-handed (lower status) and right-handed (higher status), and it was the elite right-handed castes who attended these schools.

Another important source is the set of reports prepared by William Adam between 1835 and 1838 in Bengal and Bihar. Adam found that many students came from farming and working communities rather than from priestly groups alone. These reports suggest that education in village schools was not limited only to Brahmins.

Many non-Brahmin communities participated in basic education, especially where literacy was needed for trade, agriculture, and administration. These communities included the Kayasthas and Baidyas of the Ganga river basin, traditionally involved in bureaucratic and accounting activities. These were all elite groups.

### **Limitations of indigenous education system**



However, this system also had limitations. Education was not equally available to everyone. Communities considered “untouchable” often remained excluded from formal schooling. Women’s education was also very limited.

Furthermore, advanced scholarship in subjects such as Sanskrit grammar, philosophy, ritual studies, and theology remained largely concentrated in Brahmin institutions such as Sanskrit colleges and traditional gurukulas. Subjects like science and art were not formal subjects. In other words, basic literacy was somewhat spread across social groups, but higher learning remained restricted.

This was the educational environment when Thomas Babington Macaulay arrived in India in 1834 as the Law Member of the Governor-General’s Council. Macaulay was a British historian and politician educated at Cambridge. He came from a reform-minded British family and believed strongly in the superiority of European knowledge and literature.

#### **Shift to English education under Macaulay**

In 1835, Macaulay wrote the famous ‘Minute on Indian Education’. At that time, the British administration was debating whether government funds should support traditional Indian learning in Sanskrit and Persian or promote Western education in English. Macaulay strongly supported English education. He argued that European knowledge was far superior and that the government should not spend money promoting classical Indian learning.

Macaulay’s goal was also practical. The British ruled India with a very small number of European officials. They needed educated Indians who could assist in administration, law, and communication. Macaulay, therefore, proposed creating a class of Indians who would learn English and help the colonial government. He famously wrote that the aim was to create people who were “Indian in blood and colour, but English in taste, opinions, morals, and intellect.”

The British government accepted this recommendation. English gradually became the language of higher education and administration. New schools and colleges teaching subjects such as science, law, philosophy, and history began to appear in cities.

#### **Advantages and disadvantages of British education system**

This new system had important benefits. English education opened the door to global knowledge. Indians gained access to modern science, new political ideas, and developments taking place in Europe. Ideas such as liberty, democracy, and nationalism spread through English education. Many leaders of the Indian freedom movement were products of this system. In an unexpected way, the colonial education system helped create the intellectual foundations of Indian nationalism.

English also became a link language across India. People from different linguistic regions could communicate with each other in a common language. This helped create a wider national conversation among educated Indians.

However, the new system also had negative effects. Macaulay dismissed Indian intellectual traditions as inferior. As a result, traditional institutions such as Sanskrit colleges and Persian schools gradually lost support and prestige. Many indigenous systems of learning declined. Many communities like Brahmins and Kayasthas who were hereditary bureaucrats in royal courts lost their privileged position.



The colonial education system also mainly benefited a small urban elite. English education required resources and access to city schools, which most rural Indians lacked. A small English-educated class emerged that was often socially distant from the majority of the population.

Another consequence was that Indian history and culture began to be studied through European academic frameworks. Colonial scholarship often portrayed India as backward until Western influence arrived. This shaped intellectual debates and educational narratives for many years.

#### **How Indians used the new system creatively**

Despite these problems, Indians also used the new system creatively. English-educated scholars translated Sanskrit texts, reinterpreted classical traditions, and introduced Indian philosophy to the world. Reform movements emerged that combined Western ideas with reinterpretations of Indian traditions.

Thus, the shift from pre-colonial village education to the colonial English education system created both losses and new opportunities. The earlier system provided local, practical literacy but was socially limited and uneven. The new system opened access to global knowledge but weakened indigenous traditions and served mainly a small elite.

### **'DHURANDHAR: THE REVENGE' AND THE PERILS OF 'NATIONALIST' VIOLENCE**

With Dhurandhar's second part, it is as if director Aditya Dhar wanted to prove his critics right, and not wrong. With the first part there was a huge backlash against the few critics who had called it propaganda. Now, even ardent fans find it difficult to deny that the sequel is propaganda as the political messaging is no longer subtle.

This propaganda is not in favour of the state, like many Hollywood films, but in favour of the ruling party, thus collapsing together the state and the party. Nevertheless, the label "propaganda" is hardly novel in a Bollywood climate suffused with propagandist productions. What is more critical, in a political reading, is that films such as Dhurandhar are enabling the construction of a new kind of Indian citizen, in which a narrowly defined nationalism is the only virtue and is also indissolubly associated with violence. This has grave implications for culture as well as democracy.

When the chief antagonist, a barbaric ISI figure Major Iqbal (Arjun Rampal) who wants to commit unspeakable horrors on Indians, is told by his father: "You said your people would win again this time, didn't you?" against the backdrop of the 2014 visual of the oath-taking of Prime Minister Modi, the film is emphatic about labelling the main opposition in the world's largest democracy, the Congress party, as an ally of the terror-sponsoring Pakistani state.

#### **Rewriting history**

When the film portrays demonetisation as a masterstroke against Pakistani production of Indian fake currency, it seeks to rewrite history. After all, demonetisation led to the deaths of numerous people, did not eliminate terrorism or black money (99.3% of currency was returned to the banks), devastated the vast informal sector and brought down India's GDP growth rate from 8.3% (2016) to 3.9% (2019). For a film that is lauded for showing real events, many of the terrorists and gangsters were killed, unlike depicted, before 2014.



As histories are being blatantly rewritten for explicitly militarist-nationalist causes, the film ends with an actual Army motto, 'Balidan Param Dharm' (sacrifice is the highest duty). Here, every male citizen is encouraged to perform what sociologist Klaus Theweleit — who studied male fantasies and Nazism — would call as “soldierly masculinity.”

After all, the film is unabashed when a lead character Ajay Sanyal (R. Madhavan playing Ajit Doval) tells the protagonist Jaskirat/Hamza (Ranveer Singh): “We are men... we are meant to fight. For our cause. For our dreams. For our rights. For our family.” Unsurprisingly, the female lead, Yalina (Sara Arjun), gets around 15 minutes of screen time in the four-hour film as her husband sets out exacting revenge for all the nation’s wounds.

### **Reducing nationalism to performative violence**

Being an actual soldier and a metaphorical soldier for the nation are intertwined. Jaskirat, a young man whose father and grandfather were in the Army, wanted to join the military himself. But his dreams are scotched when his father and sister are killed, and another sister is kidnapped. In the face of a failed government (conveniently in Punjab) that protects the politically influential rapists and murderers, Jaskirat is “forced” to kill the 12 perpetrators and find his sister.

But if the visible face of the state gives him capital punishment, the invisible face of the state rescues him from death row and turns him into the nation’s soldier. Anger against those who destroyed his family and the government that failed to protect him is now channelled into an external enemy state — or internal enemies who aid the external enemy. As Jaskirat declares — after a few years as Hamza, the spy, in Pakistan — he has abandoned his longing to return to his family as his only obsession is to complete the task of the elimination of nation’s enemies.

This is the sorcery that Dhurandhar performs: the reduction of nationalism from the Constitution’s goals of establishing a democratic republic that ensures justice, liberty, equality and fraternity of all to one that is merely about protecting the nation from enemies through performative violence. Every other socio-economic goal is inconsequential.

### **‘Internal’ enemies**

While the external enemy is crystal clear, the internal enemies, who aid the external enemy, are also the usual suspects: Khalistanis, Naxalites, Kashmiri militants, Popular Front of Kerala, Uttar Pradesh slaughterhouses, NGOs, socialists and universities. Here, even legitimate democratic dissidents are termed as terror allies.

While the film places the UP-don Atiq Ahmad as the linchpin of the Pakistani terror network and shows Dawood Ibrahim saying that there is fear in “our people” since the chaiwala has come, it cannot mention, that Brij Bhushan Sharan Singh, who was once charged under terror laws for harbouring Dawood-gang terrorists, was a five-term ruling party MP (until 2024).

Violence becomes the sine qua non of nationalist justice here. If the “Angry Young Man” trope of the 1970s Hindi cinema is a rebellious anti-hero taking on the establishment against poverty and inequality and resolutely on the side of the poor, the angry young man of the present is a hero of the establishment, especially the popcorn-chomping classes. They vicariously enjoy the violent nationalist justice delivered by him, which includes forcing a terrorist who called Hindus cowards, to utter “Bharat Mata ki Jai”, as he is killed.

The film does not just depict ghastly violence; it revels in it as spectacular entertainment juxtaposed with pulsating music, a music which liberally uses English hip-hop. Violence assumes,



what cultural critic Henry Giroux calls, “a glamorous and fascist edge.” Audience comments indicating that among the most enjoyed portions of the film were Jaskirat’s brutal killings of his family’s murderers show how films build common sense around vigilante justice, when police encounter killings have wide legitimacy.

### **Unmentionable violence**

Just as a reductionist form of nationalism is invoked, the film conveys that only a certain form of violence in reality should evoke citizen anger: terrorist violence. As director Rajamouli said, commenting on Madhavan’s role: “You carried the helplessness and frustration of a nation so well.” All other forms of everyday violence (including structural violence), that of vast inequalities (the top 1% of Indians earn more income now than in the last year of the British Raj), the million plus lives lost due to air pollution annually, the hundreds of thousands who died under the COVID-19 pandemic for the lack of health care, those who were lynched in the name of religion, the children who died consuming contaminated cough syrup, and so on become unmentionable violence in the new nationalist cinematic imagination.

The philosopher Hannah Arendt had argued that the roots of totalitarianism lay in the lack of critical thinking, and in propaganda marked by “extreme contempt for facts.” India, the nation of over 1.4 billion people, is throbbing with a treasure trove of human stories. Yet, Dhurandhar’s new India asks to monochromatise our imagination.

## **SEX VS GENDER: OLYMPICS’ POLICY TO BAR TRANSGENDER WOMEN REIGNITES DEBATE**

The International Olympic Committee (IOC) announced a new policy this week on the eligibility for the women’s category in the Olympic Games, limiting participation to “biological females” and thus excluding transgender and intersex people, among others.

### **Key Takeaways:**

- The policy will apply in the 2028 Olympics in the United States. Notably, in 2025, US President Donald Trump signed an executive order for the IOC to amend standards, “ensuring that eligibility for participation in women’s sporting events is determined according to sex and not gender identity or testosterone reduction.”
- The participation of trans women and those having characteristics like higher testosterone levels in women’s sports has long been a subject of polarising debate. The 2024 Paris Olympics saw considerable controversy over gold medallist boxer Imane Khelif, with many people incorrectly identifying her as a trans woman.
- Reviewing its 2021 eligibility policy, the IOC said it took comments from experts across fields — sports science, endocrinology, transgender medicine, sports medicine, women’s health, ethics and law — and female athletes. It said the broad consensus was for inclusion in the “Female Category” to be based on biological sex.
- At this stage, it is important to distinguish between the concepts of “sex” and “gender”. As the IOC itself notes, sex (male/female/intersex) is the distinction based on reproductive biology.
- Sex is determined based on chromosomes, which carry genes. Humans have 23 pairs of chromosomes — 22 are identical in men and women; one, the sex chromosome, is different. The XX sex chromosomes result in the development of female sex organs, and XY in male sex organs.



— Intersex people have variations which do not fit this binary. Crucially, some people born with female reproductive organs may also carry the XY chromosome, in what is known as Swyer syndrome, one of many “Disorders of Sex Development”, or DSDs. South African athlete Caster Semenya, who has a DSD, has gone to court over policies barring her from participating unless she suppresses her testosterone levels.

— Gender, however, is a social construct — It is “a person’s sense of themselves as a woman or a man or neither/non-binary,” as the IOC says. Gender identification can be different from sex. For example, a transgender woman may have been born with male sex characteristics, but identify as a woman.

— The SRY gene, found on the Y chromosome, is responsible for testosterone production. Multiple studies have attempted to decode how the hormone affects physical characteristics. A 2017 paper (‘Circulating Testosterone as the Hormonal Basis of Sex Differences in Athletic Performance’) published in the journal *Endocrine Reviews* supported the link between testosterone and athletic performance.

— The new IOC policy said that such differences lead to a 10 to 20% performance gap between male and female athletes, depending on the sport (lifting, punching, throwing and jumping seeing the sharpest difference). However, it noted that “The extent of the performance advantage (and its implications) varies across sports and events and from occasion to occasion, depending on the athletes involved.”

— At the end of the day, a lot remains unknown about the impact of testosterone on sporting performance. Many question if the case of women who are born with higher levels of testosterone is any different from that of people with other genetic advantages, like basketball great LeBron James’ height or swimming champion Michael Phelps’ massive fin-like hands.

— This is at the heart of the debate surrounding gender eligibility in women’s sports. Many argue that to prevent some athletes from having an unfair advantage in women’s sports, women with DSDs, which facilitate greater testosterone production, must not be allowed to compete with other women

— World Athletics previously used testosterone levels as an eligibility determinant. DSD athletes need to keep their testosterone level below 2.5 nmol/L for at least 24 months before they become eligible to participate in any event. Last year, it introduced a one-off SRY gene test for all female athletes ahead of the World Championships in Tokyo, Reuters reported.

— FINA, the world swimming body, the International Cycling Union, and the International Rugby Union have all instituted varying degrees of bans on trans women athletes in recent years, linked to testosterone levels.

— Many have described the debate as a battle between inclusion (of all women, no matter their biological differences) and fairness (for women who do not have high levels of testosterone). It has garnered further attention as issues related to diverse gender and sexual identities have become ideological battlegrounds in politics in recent years.

**Do You Know:**

— In the National Legal Services Authority (NALSA) vs. Union of India (2014) case, the Supreme Court of India recognised transgender individuals as the third gender, indicating that Articles 14,



15, 16, 19, and 21 of the Indian Constitution recognise the right to equality and dignity of all individuals irrespective of their gender.

— In the Justice K S Puttaswamy (Retd.) vs. Union of India (2017) case, the apex court recognised that the right to privacy under Article 21 includes bodily integrity, decisional autonomy, and the right to express one's identity. In 2018, Section 377 was decriminalised, legalising consensual same-sex adult relationships.

— The government passed the Transgender Persons (Protection of Rights) Act 2019 and the accompanying Rules 2020 to codify the principles laid down in the 2014 NALSA judgement. The 2019 Act gave transgender persons the right to self-declare their gender.

— In June 2025, the Andhra Pradesh High Court clarified that transgender women should be legally recognised as women, which entitled them to the same legal protections as cisgender women (whose gender identity matches the sex they were assigned at birth) under Section 498A of the Indian Penal Code.

— In the recent Jane Kaushik v. Union of India (2025) judgement, the Supreme Court held that no transgender or gender-diverse person is required to seek permission from their employer for surgical interventions unless their job is directly connected to their gender identity.

## SHORT NEWS

### DIMONA AND ARAD

— In the ongoing war in West Asia, Iranian missiles struck the Israeli city of Dimona, close to one of Israel's key nuclear facilities, and nearby Arad. The strike in Arad alone injured 84 people.

— The Iranian barrage came hours after the US and Israel struck Tehran's Natanz nuclear facility for the second time in the ongoing war.

### LITANI RIVER

— Israel struck a main bridge linking Lebanon's south to the rest of the country after ordering its military to destroy all crossings over the Litani River and to step up the demolition of homes near the southern border.

— According to the National Litani River Authority, "Litani River is the longest and largest river in Lebanon, with a length of 170 km, and its water capacity is approximately 750 million cubic meters per year."

— "It originates from several springs called Al-Aleeq Springs, located at a distance of ten kilometers to the west of the city of Baalbek, at an altitude of one thousand meters."

### IN LEBANON'S HISTORIC CITY OF TYRE, ANCIENT SITE IS THREATENED BY ISRAELI BOMBS

The selected passage details the plight of Tyre, an ancient city in southern Lebanon, whose archaeological treasures are under threat from Israeli bombardment amid the ongoing West Asia conflict. Despite symbolic protection measures, such as UNESCO-linked signage referencing the



1954 Hague Convention, strikes have hit close to the Al-Bass necropolis, resulting in civilian casualties and damage to nearby structures, though key monuments remain intact. The Lebanese Culture Minister and experts condemn the attacks, highlighting that these sites are devoid of military value and criticising the risks involved in transferring artefacts for safekeeping, particularly as even Beirut is not immune from bombings. Residents and heritage workers lament the lack of international intervention, stressing that these sites represent not only Lebanese but broader human civilisation.

#### UKRAINE DRONE MANUFACTURERS FLOODED WITH WEST ASIAN REQUESTS

Since the outbreak of war in West Asia, Ukrainian drone manufacturers have seen a surge in demand for their technology from the region, comparing this interest to a modern-day gold rush. Ukraine has emerged as a world leader in drone manufacturing following Russia's invasion in 2022, with hundreds of companies producing millions of devices ranging from frontline FPV drones to advanced interceptors. Nations in the Gulf, under attack from Iranian drones similar to those used by Russia in Ukraine, are driving the high demand.

Despite Ukraine's export restrictions on military equipment since the Russian invasion, discussions about easing these limits continue. President Zelensky views drones as a strategic asset, seeking long-term international partnerships to fund production. However, he has warned against unauthorised deals and quick-profit schemes by private companies. Manufacturers assure that exports will not compromise supplies for Ukraine's military or risk technology falling into Russian hands.

Ukrainian companies emphasise that their expertise and tactical experience are even more valuable than the hardware itself. Still, some experts believe wealthy Gulf states may continue relying on conventional air defence systems rather than fully adopting Ukrainian drones. The industry remains highly secretive, with only partial details disclosed about sales and deployments, and many deals still under negotiation.

#### LPG SHORTAGE AFFECTS STUDENTS PREPARING FOR GOVT. JOB EXAMS IN PATNA

In Patna's major coaching hubs (Musallahpur Hatt, Bazar Samiti, Saidpur Nahar areas), thousands of students preparing for competitive government job exams are facing severe hardship due to an acute shortage of domestic LPG cylinders.

With cylinders empty for days, students are surviving on minimal cold food like churra-dahi and sattua, while black-marketing has pushed refill prices from ₹100 to ₹300–350. Roadside eateries have doubled or tripled meal prices, and many coaching institutes are seeing a sharp drop in attendance. Several hostels have shifted to cooking on coal, wood, or electric heaters, and some students are considering returning to their villages as the crisis affects their health and studies.

The Bihar government has denied any LPG shortage, while opposition leader Tejashwi Yadav has blamed it on the central government's foreign policy failures linked to the West Asia conflict.

#### TUNNEL BORING MACHINE (TBM)

— The 3,000-tonne Tunnel Boring Machine (TBM), supplied by German company Herrenknecht, for India's maiden bullet train project has arrived in Mumbai.



— It marked a major step forward for the 21-km tunnel stretch of the Mumbai-Ahmedabad High Speed Rail (MAHSR) project.

— Of the 508-km bullet train project, tunnels account for 27.4 km. Of this, 21 km comprises underground tunnels, while 6.4 km consists of surface tunnels.

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### “SMOG-EATING” PHOTOCATALYTIC COATINGS

— As a part of a six-month collaboration between the Delhi government and IIT Madras, scientists are testing whether “smog-eating” photocatalytic coatings when applied on roads, pavements, and tiles, can dismantle key air pollutants and clean Delhi’s foul air.

— They have to test whether “smog-eating” photocatalytic coatings on public spaces could reduce pollutants such as nitrogen dioxide (NO<sub>2</sub>) and volatile organic compounds (VOCs), both key drivers of urban air pollution.

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### MELANOMA

Melanoma is one of the most dangerous common skin cancers. It starts in melanocytes, the skin cells that make melanin, the pigment that gives skin its colour.

Cancer doesn’t appear overnight. A normal cell becomes cancerous in steps, as its DNA and its gene-control systems pick up changes over time. These changes push the cell to do three things:

- divide too much,
- avoid being destroyed by the immune system, and
- spread into other parts of the body. This spread is called metastasis, and it is what makes many cancers deadly.

Researchers want to know which changes matter most because those changes can become targets for treatment.

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### WORLD TUBERCULOSIS DAY 2026

— World Tuberculosis Day is observed on March 24 every year. It aims to increase public awareness about the global epidemic of tuberculosis (TB) and the numerous efforts being taken to eliminate the disease.

— The date marks the day in 1882 when Dr. Robert Koch announced that he had discovered the bacterium that causes TB, which opened the way towards diagnosing and curing this disease.

— The theme of World TB Day 2026 is ‘Yes! We can end TB!’. It is a call to action and a message of hope, affirming that it is possible to get back on track and turn the tide on the TB epidemic, even in a challenging global environment.

— TB is caused by an organism called mycobacterium tuberculosis, which mainly affects the lungs, but can also impact other parts of the body. TB spreads through the air when an infected individual coughs, sneezes, or speaks.



— On this day, the government launched another TB Mukht Bharat Abhiyaan — 100 days' campaign. The TB screening will be conducted using 2,000 AI-enabled hand-held X-ray devices, which AI tools can read for signs of TB, enabling early detection.

#### **TB in numbers**

The tuberculosis burden in India has continued to decline — with an estimated 27.1 lakh cases and just over 3 lakh deaths in 2024, according to the latest available data from the Global TB Report 2025. Globally, 10.7 million people fell ill and 1.23 million died in 2024, meaning India accounted for nearly a fourth of all the cases and deaths across the world.

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#### **US NATIONAL BOOK CRITICS CIRCLE AWARD 2026**

— Indian Booker-winning novelist Arundhati Roy was awarded the United States National Book Critics Circle award for her memoir, *Mother Mary Comes to Me* in the Autobiography section.

— *Mother Mary Comes to Me* has been published in the United States by Scribner (now a part of Simon & Schuster), which has a legacy of publishing literary giants such as Ernest Hemingway, F Scott Fitzgerald, and Stephen King.

— South Korean Nobel laureate Han Kang won the fiction honour for her novel, *We Do Not Part*.

— Karen Hao, a journalist, took home the nonfiction prize for her investigation, *Empire of AI: Dreams and Nightmares* in Sam Altman's *OpenAI*, which examines the company behind ChatGPT, whose reach and capabilities have been a subject of intense public debate around the globe, while Neige Sinno won the translation prize for *Sad Tiger*, which was rendered into English from the French by Natasha Lehrer.

— The National Book Critics Circle, founded in New York in 1974, comprises more than 850 critics and editors and each year honours the best books published in the United States.

— The book was also shortlisted for the 2026 Women's Prize for Non-Fiction. The winner will be announced on 11 June 2026 at the Women's Prize Trust's summer party in London, receiving £30,000 and a limited-edition sculpture.

**DreamIAS**

**BUSINESS AND ECONOMY****WAR IN GULF RAISES CONCERN OVER HELIUM SUPPLIES, CRITICAL FOR MRI MACHINES**

The disruption in the global supply of helium because of the war in the Middle East and the severe restrictions on trade through the Gulf of Hormuz has begun to ring alarm bells in India's healthcare sector, especially with regard to the cost of magnetic resonance imaging (MRI) scans and the installation of MRI machines.

**Key Takeaways:**

- Industry experts said the situation has not yet escalated into an outright shortage of helium, but supply disruptions, especially from Qatar, which supplies about a third of the world's helium exports, have driven up prices significantly.
- While any disruption of supply chains including shipping constraints can have downstream effects on healthcare infra, experts says the extent of the disruption depends significantly on the type of MRI systems that are involved.

The newer "helium-free" machines, which use minimal helium – often less than 10 litres – do not, for example, require refilling, and are largely unaffected. However the bulk of India's installed base relies on traditional systems that require substantial quantities of helium. On the ground, the stress has begun to show at hospitals and diagnostic centres. The managements of several labs in the city insisted that their MRI operations have not been impacted yet.

**Do You Know:**

- Helium, a colourless, odourless, gas – the first of the six noble gases in the periodic table – is a non-renewable resource which, despite being the second most abundant element in the universe after hydrogen, is rare on Earth.
- Helium is produced commercially by extracting it from natural gas by a process known as cryogenic distillation. Qatar is the world's third largest exporter of natural gas after the United States and Russia.
- Helium is critical for operating MRI machines. Helium in its liquid state is used to cool the intensely powerful superconducting magnets that are at the heart of MRI machines.
- The superconducting coils work at cryogenic temperatures, and helium, which is chemically inert and has the lowest boiling point of any element (minus 269 degrees Celsius), is the only practical coolant for these machines.

**OF INDIA'S 5.33 MN TONNE OF STRATEGIC OIL RESERVE CAPACITY, 36% IS EMPTY**

India's strategic petroleum reserves (SPRs), which have a capacity to store 5.33 million tonnes of crude oil, are currently holding 3.37 million tonnes of oil, or just about two-thirds of their total storage capacity, the Ministry of Petroleum and Natural Gas (MoPNG) said in the Rajya Sabha.

**Key Takeaways:**

- The SPRs — spread across three locations in Andhra Pradesh and Karnataka — are meant to act as a buffer for short-term supply shocks and have been in focus in view of the raging war in West

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



Asia, which has disrupted energy flows to India. At full capacity, the three SPRs cover around 9.5 days of India's crude oil supplies.

- In July 2021, the government had approved the establishment of two more commercial-cum-strategic petroleum reserves with a cumulative storage capacity of 6.5 million tonnes to 4 million tonnes in Odisha's Chandikhol and another 2.5 million tonnes in Karnataka's Padur. Besides these, there were plans to have reserves in places like Bikaner and Rajkot, which would have raised the total SPR capacity by another 6 million tonnes. Decisions on these reserves are yet to be taken.
- Around 2.5–2.7 million bpd of India's crude imports — accounting for around half of the country's total oil imports — have transited the Strait in recent months; the longer-term average is around 40%. The crisis has underscored the need to build more oil stocks and reserves for dealing with extended supply disruptions.
- Experts point to the option of storage being leased out to West Asian refiners, especially since it reduces their freight costs into Southeast Asian markets. In fact, In July 2021, the government also approved the commercialization of Phase -I SPRs under which an agreement was signed between Abu Dhabi National Oil Company (ADNOC) UAE and ISPRL, permitting ADNOC to use 750,000 tonnes capacity at the Mangaluru SPR.

**Do You Know:**

- The concept of dedicated strategic reserves was first mooted in 1973, after the first oil crisis. Western strategic reserves have been tapped during the first Gulf War (1991), after Hurricane Katrina (2005), and in 2022 after global oil prices surged in the wake of Russia's invasion of Ukraine.
- International Energy Agency (IEA) members have now decided to release 400 million barrels of oil from their emergency in view of the current supply disruption and oil price surge caused by the West Asia war. Countries like the US, China, and Japan maintain massive strategic petroleum reserves.
- In India, the ISPRL is a special purpose vehicle floated as a wholly-owned subsidiary of the Oil Industry Development Board for building and managing the strategic crude storage. Currently, it has three underground caverns at Visakhapatnam (1.33 million tonnes), Mangaluru (1.5 million tonnes), and Padur (2.5 million tonnes).
- India is the world's third-largest consumer of crude oil and depends on imports to meet over 88% of its requirement. The IEA recommends that countries should hold oil stocks equivalent to at least 90 days of their net oil imports. IEA members are obligated to maintain these levels of reserves; India is not a full member of the grouping but an associate member. This 90-day reserve holding can include strategic reserves, as well as commercial inventories.

**WHAT IS AT STAKE AT THE WTO'S MC14?**

**The story so far:**

The World Trade Organization's (WTO) 14th Ministerial Conference (MC14) will take place from March 26 to 29 at Yaoundé, Cameroon. The conference is the WTO's highest decision-making body and generally meets once every two years. It is empowered to make all decisions on WTO law and to chart a path for the organisation's future work.



### **What is the context in which MC14 is taking place?**

MC14 is taking place amid rising geopolitical rivalry between the U.S. and China, ongoing global conflicts, and the mounting securitisation of international trade relations. Furthermore, trade multilateralism appears to be in retreat, while unilateralism is on the rise. The U.S. has, over the last year, launched a massive assault on trade multilateralism by weaponising tariffs. Arbitrary tariff impositions by the U.S. grossly violate the cardinal rules that underpin the WTO, namely the most favoured nation (MFN) rule, which epitomises non-discrimination, and the obligation not to impose tariffs beyond bound rates. The U.S. has also begun signing new, one-sided trade agreements with countries through tariff coercion.

### **Why is trade multilateralism reeling under a crisis?**

There is a growing belief in Washington that the WTO, which the U.S. was instrumental in creating in 1995, has not served American interests well. The meteoric rise of China in the last two decades has significantly narrowed the gap between Washington and Beijing. Moreover, China's accession to the WTO, which the U.S. facilitated, has not had the desired impact of disciplining Beijing's state-led industrial policies.

Consequently, the U.S. now wants to eliminate all legal constraints that apply to it, such as WTO law, to take on the Chinese threat head-on. For this reason, the U.S. paralysed the WTO's dispute settlement system by relentlessly blocking the appointment of members to the Appellate Body — the organisation's highest judicial arm.

Another key reason for the crisis is the WTO's inability to draft new trade rules due to consensus-based decision-making. Over the past three decades, the WTO has created only two new agreements: the Trade Facilitation Agreement and the Agreement on Fisheries Subsidies. The sluggishness in forming new trade rules has pushed countries to seek new venues for trade law-making, such as free trade agreements (FTAs).

### **What are the key issues in MC14?**

A fundamental issue at MC14 is whether plurilateral agreements, such as the Investment Facilitation for Development, endorsed by over 120 countries, and the Agreement on Electronic Commerce, should be incorporated into the WTO rulebook.

Although the WTO is a multilateral organisation, it allows plurilateral trade agreements — agreements between fewer than all WTO members. These are typically included in Annex 4 of the WTO treaty. Plurilateral agreements bind only the signatories. However, for inclusion in Annex 4, such agreements must be approved by consensus among all WTO members.

Given the difficulty of achieving consensus, many countries believe that plurilateral agreements are the way forward to reinvigorate the WTO's legislative function. On the other hand, a few countries, such as India, argue that inaugurating the plurilateral rule-making door would open a Pandora's box and lead to the fragmentation of the system. It will be riveting to see whether countries can break this logjam at MC14.

Another key issue is the WTO's e-commerce moratorium. First agreed in 1998 and renewed every two years, this agreement among WTO member countries not to impose tariffs on electronic transmissions has benefited digital trade. This moratorium is set to expire on March 31. While the developed world wants it to be made permanent, the choice is not so easy for developing countries



like India. Given the rise in digital trade, continuing the moratorium could lead to significant revenue losses for developing countries.

The 166 WTO member countries meeting in Cameroon are also expected to deliberate on issues of special and differential treatment (SDT) for developing and least developed countries (LDCs). SDT, part of the 'WTO reforms', recognises that, since not all WTO members are on an equal footing, special rights shall be conferred on developing countries and LDCs. The U.S. is keen to weaken the SDT principle by prohibiting larger economies, such as China, India, Brazil, and Indonesia, from enjoying special rights.

On dispute settlement reforms, it is critical to unequivocally demand the restoration of the Appellate Body to put the WTO's dispute settlement system back on track.

The U.S. is also expected to use MC14 to challenge foundational WTO principles, such as the MFN rule. Developing countries that benefit from these principles should strongly oppose such efforts.

#### **What should be India's role?**

India, which has always maintained its support for trade multilateralism, needs to walk the talk. It should regain its role as the normative leader for the third world by using the MC14 to articulate the importance of multilateralism and to forge alliances with other developing countries.

To do so, New Delhi should not shy away from re-visiting its deeply entrenched positions, such as opposing plurilateral agreements. India, along with other countries, should also consider other innovative solutions, such as electing Appellate Body members through voting. If MC14 fails to strengthen the WTO and promote trade multilateralism, it will represent a victory for America's blatant unilateralism and its effort to establish a new global trade order rooted in coercion. This will be detrimental to the developing world.

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

— The World Trade Organization is the only international organization that deals with the rules of trade between countries. Founded in 1995, the WTO is run by its 166 members, and according to its rules, all decisions are taken through consensus, and any member can exercise a veto. Dr. Ngozi Okonjo-Iweala is the seventh Director-General of the WTO. She is the first woman and the first African to serve as Director-General.

— Its aim is to promote free trade, which is done through trade agreements that are discussed and signed by the member states. The WTO also provides a forum for countries to negotiate trade rules and settle economic disputes between them.

— WTO's Appellate Body, set up in 1995, is the standing committee that presides over appeals against judgments passed in trade-related disputes brought by WTO members. It is a standing body of seven persons which requires at least three members to function. However, due to lack of consensus in appointment of Appellate Body it has been dysfunctional.

### **WORLD TRADE ORGANISATION'S 14TH MINISTERIAL CONFERENCE**

— The WTO's 14th Ministerial Conference (MC14) was held in Yaounde, Cameroon from 26th March to 29th March, 2026. The conference was chaired by Luc Magloire Mbarga Atangana, Cameroon's Minister of Trade. The Indian delegation is led by Minister of Commerce and Industry, Piyush Goyal.



- The MC14 concluded without agreements on major issues, including extension on e-commerce moratorium. It refrain countries from imposing customs duties on digital transmissions such as downloads, streaming content, cloud services and other data-based services.
- Moratorium on customs duties on electronic transmissions has been renewed every two years since it was first instituted in 1998. India has been arguing against any extension to the moratorium because digital trade has been dominated by big tech and developed countries, and the moratorium squarely favours the developed nations.
- The Ministerial Conference is the topmost decision-making body of the WTO, which usually meets every two years.
- The World Trade Organization is the only international organization that deals with the rules of trade between countries. Founded in 1995, the WTO is run by its 166 members, and according to its rules, all decisions are taken through consensus, and any member can exercise a veto.
- Dr. Ngozi Okonjo-Iweala is the seventh Director-General of the WTO. She is the first woman and the first African to serve as Director-General.
- It aims to promote free trade, which is done through trade agreements that are discussed and signed by the member states. The WTO also provides a forum for countries to negotiate trade rules and settle economic disputes between them.
- The WTO publishes the World Trade Report and Global Trade Outlook and Statistics.

#### HOW A PERFECT STORM HAS DRAGGED DOWN GOLD PRICES

During much of 2025, when US President Donald Trump sparked off his tariff-led trade war, gold prices rose while the dollar weakened. This was to be expected — trade wars create uncertainty, and the yellow metal is favoured when risks are high. Now, there is an actual war happening, complete with missiles hitting gas fields, drones decimating West Asian cities, and crude oil trading north of \$100 per barrel and threatening the world economy.

#### Key Takeaways:

- And yet, gold — the ultimate safe haven – has slumped 15% to around \$4,500 per ounce (oz). At the same time, the US dollar is strengthening on fears that rising energy prices may raise inflation and jettison any interest rate cuts by the Federal Reserve.
- Back in late January, when gold had hit its record high of \$5,600/oz, Swiss investment bank UBS raised its price forecast for the metal to \$6,200/oz for the first three quarters of 2025, with \$7,200/oz in an upside scenario and \$4,600 in a downside scenario.
- Gold's decline did not begin as soon as the US and Israel attacked Iran on February 28. Gold futures actually rose to over \$5,400/oz on March 2, up almost 6% from February 26.
- It was only then that the decline began, first gradually (gold fell below \$5,000/oz only on March 18) and then rapidly once it became clear that the conflict wasn't going to be an in-and-out job and the destruction inflicted on the Gulf energy infrastructure would be felt beyond the short-term.



— On February 26, US markets indicated an 18% chance of the Fed cutting interest rates by 25 bps to 3.25-3.5% at its April 28-29 meeting. One month later, there is a 96% chance of rates being left unchanged. The remaining 4% is in favour of a rate hike.

— Higher interest rates diminish the relative appeal of non-yielding assets such as gold. How? The cascading impact set off by the surge in oil prices since the start of the Iran war, primarily due to the closure of the Strait of Hormuz, means the supply of oil globally has been severely disrupted. This has pushed up the price of energy, be it crude oil or natural gas.

— If energy prices rise, then so will inflation. And while official inflation data for March for most countries, including the US and India, will only be released in the second week of April, there are clear signs that prices have increased at a faster rate.

— It is no surprise, then, that hopes of interest rate cuts are being shelved. When that happens, bond yields jump. On March 1, the 10-year US government bond was trading at a yield of 4.05% in the secondary market. On Thursday, it was at 4.33%. In India, the 10-year government bond yield has risen around 20 bps.

— At the same time, the US dollar has also strengthened – as is being acutely reflected in the rupee's exchange rate. And a stronger dollar makes assets priced in the US currency – such as gold and silver – more expensive, thereby hurting their demand and prices.

— Analysts are referring to the above trend as 'the oil-shock paradox' – energy inflation driven by oil is boosting the US dollar and shifting the interest rate trajectory. Both, in turn, are impacting assets such as gold that should ideally have been gaining from the oil shock.

— But this is in keeping with historical trends seen during earlier conflicts such as Russia's invasion of Ukraine in 2022 and previous West Asian conflicts: an initial price rise followed by a decline as investors sought liquidity and invested in alternatives such as energy-linked commodities.

— After Russia's invasion of Ukraine in early 2022 and the US government subsequently freezing over \$300 billion of Russia's forex reserves, central banks have looked to diversify their holdings and not rely as heavily on US dollar assets lest they end up in the same position as the Central Bank of Russia. In 2024 and 2025 combined, central banks bought almost 2,000 tonnes of gold.

— For retail investors, the huge surge in gold purchases in late 2025 was due to the fear of missing out.

— It is in this context that the recent fall should be seen: investors would have booked profits. Some, such as Poland's central bank — the record buyer of gold among central banks in 2024 as well as 2025 — even suggested selling gold and using their profits to fund their country's defence, an idea that was quickly nixed. Even at \$4,500/oz, the price of gold is up 35% year-on-year and 95% compared to two years ago.

**Do You Know:**

— Gold in its purest form is a bright, slightly reddish yellow, dense, soft malleable and ductile metal. It is one of the least reactive chemical elements and is solid under standard conditions.



— Gold often occurs in free elemental (native) form, as nuggets or grains, in rocks, in vein and in alluvial deposits. Gold is resistant to corrosion and to most acid and has unique properties distinct from other metals.

— Gold is a relatively scarce metal in the world and a scarce commodity in India. The domestic demand is mainly met through imports.

#### SAME FIELD, TWO FATES

In a marked escalation of the West Asia conflict, Israel attacked Iran's South Pars gas field, the world's largest, shared with Qatar across the Persian Gulf, on March 18. Iran, in retaliation, launched missile attacks on energy facilities in Qatar, Saudi Arabia, the UAE, Kuwait and Israel.

The U.S. was quick to distance itself from the attack, with President Donald Trump saying that Israel acted alone and that Tel Aviv would not target the "extremely important and valuable" site again.

The war on Iran had already dealt a massive energy shock to the global economy by choking off exports of crude oil and LNG through the Strait of Hormuz. Brent crude rose 5% to \$108.66 a barrel on March 18, while U.S. West Texas Intermediate crude rose 2.5% to \$98.65 a barrel. Natural gas prices also shot up significantly. Beneath the Persian Gulf, straddling the maritime boundary between Iran and Qatar, lies a reservoir so vast it has become central to the energy economies of both countries and much of the world beyond.

Qatar's North Field and Iran's South Pars together contain more than 1,800 trillion cubic feet of usable gas, enough, according to a Reuters report, to supply the world's needs for 13 years. The field is shared by Iran and Qatar, giving both countries the second and third largest natural gas reserves in the world, behind Russia. The field was first discovered in Qatari waters in 1971. South Pars was discovered in 1990. The two countries then embarked on strikingly different journeys with the same resource.

Qatar built Ras Laffan Industrial City, a bustling metropolis 80 km north of Doha, to process the gas from this field. Today, Ras Laffan processes nearly all of the country's LNG and is responsible for approximately one fifth of the world's entire LNG supply. The revenues it generated transformed Qatar from a small Gulf emirate into one of the wealthiest countries on earth.

Iran's story takes a different turn. South Pars accounts for 70-75% of the Islamic Republic's total gas production. The gas heats homes, powers factories, and fuel industries. It is the backbone of the country's domestic energy supply.

U.S. sanctions, first imposed in the early 1980s, effectively shut Iran out of global energy markets. Mr. Trump withdrew from the 2015 Iran nuclear deal in 2018, during his first term, and reimposed tough sanctions on Tehran, leaving part of one of the world's richest gas reserves stranded behind a wall of geopolitical isolation.

#### India's ties

The escalation of the conflict into energy sites in the region is bad news for India. India's energy relationship with Iran has remained limited as sanctions, security and commercial concerns kept several ambitious projects from taking off. The two countries discussed a 1,036-km Iran-Pakistan-India gas pipeline, but New Delhi stepped back from talks in 2007.



In 2009, ONGC Videsh Ltd. (OVL) and the Hinduja Group signed agreements to pick up a stake in Phase 12 of the South Pars gas field, along with Petronet LNG. The Indian companies were to receive up to 6 million tonnes of liquefied gas annually. OVL, along with Indian Oil Corporation and Oil India, also had plans to invest \$5-5.5 billion in developing the Farzad-B gas field. None of these projects took off.

India, which imports nearly 80% of its crude oil needs, is heavily dependent on Saudi Arabia, Iraq, Kuwait and the UAE. It also imports 60% of its LPG needs and around 50% of its natural gas requirements.

“Forty-seven percent of our LNG imports are from Qatar, [therefore], any impact there or anything which affects supplies in the Middle East [West Asia] would impact us,” Sujata Sharma, Joint-Secretary at the Ministry of Petroleum and Natural Gas told reporters on March 19. New Delhi is procuring LNG from alternative suppliers, but those supplies will take time to arrive and are likely to be more expensive.

Iranian attacks have knocked out 17% of Qatar’s LNG export capacity, causing an estimated \$20 billion in lost annual revenue and threatening supplies to Europe and Asia. Even if the war ends tomorrow, it could take years before production is normalised. This means that availability would be reduced, and the prices are elevated.

In LNG markets, where there are limited strategic reserves and supply chains stretch across conflict zones, even short-term disruptions can have outsized consequences.

#### WHY INDIA MUST STEP ON THE GAS WITH ETHANOL

In November 1975, two years after the first global oil shock courtesy of the Arab-Israeli ‘Yom Kippur’ War, Brazil launched a Proálcool programme, aimed at reducing the country’s dependence on imported fuels.

##### **Key Takeaways:**

- Proálcool mandated all petrol sold in Brazil to contain a minimum 11% anhydrous alcohol or ethanol. In 1979, when the second oil crisis came with the Islamic Revolution in Iran, Brazil introduced cars that could run on 100% hydrous alcohol (this has 5-6% water as against less than 1% for ethanol).
- By 1985, when domestic ethanol production reached nearly 1,200 crore litres, Brazilian fuel stations had two types of pumps, one for ethanol-blended petrol (Gasoline C, as it is called) vehicles and the other for 100% hydrous alcohol (E100) vehicles.
- In 2003, the first commercial flex-fuel vehicles were launched in Brazil, with engines capable of running on both Gasoline C and E100 fuel. The vehicles had electronic sensors to detect the particular ethanol-gasoline blend in the tank and adjust the fuel injection volume and spark timing automatically.
- The minimum ethanol blend in petrol was hiked to 25% by 2014 and to 27% from March 16, 2015. Since August 1, 2015, the ethanol content in Gasoline C has been set at 30%.
- In 2024, Brazil’s total fuel alcohol consumption was 3,492.4 crore litres: 2,289.6 crore litres of E100 and 1,202.8 crore litres of ethanol in Gasoline C. While the ethanol blend rate in Gasoline C was 27% (now 30%), the overall mix for fuel used in the country’s light-duty vehicles fleet stood



at 51.8%. Thus, alcohol constitutes more than half of the fuel powering Brazil's cars and two-wheelers.

**Do You Know:**

- Speaking in Parliament on the West Asia war on Monday, Prime Minister Narendra Modi referred to India's own ramped-up efforts on ethanol blending over the last decade that had helped address its vulnerabilities from imported energy.
- Since 1979, the world has seen at least three oil shocks — in 2008, when Brent crude prices surged to a record \$147.5 per barrel on July 11, and in 2022 after Russia's invasion of Ukraine, when they reached \$139.13 on March 7.
- The latest shock — from the ongoing US-Israel versus Iran war — should be a wake-up call for India and to replicate the Brazil model, said CK Jain, president of the Delhi-based Grain Ethanol Manufacturers Association.
- Currently, ethanol is covered under the goods and services tax (GST) regime. The ethanol used for blending with petrol attracts 5% GST. But petrol remains outside GST, attracting both the Central excise duty and State value added tax. And both ethanol-blended petrol and pure petrol are treated as identical for taxation purposes.
- Ethanol production involves fermentation of sugar by yeasts. In molasses or cane juice, sugar is present as sucrose. Cereal grains contain starch, a complex carbohydrate that has to first be extracted and broken down into simple sugars before further fermentation, distillation and dehydration to ethanol with 99.99% alcohol concentration.

#### AS PAIN MOUNTS, A TIMELY CUT IN PETROL AND DIESEL EXCISE DUTY

With the Centre cutting the excise duty on petrol and diesel by Rs 10 per litre each, the burden of adjustment due to higher global crude oil prices is now shifting to the government. These cuts will adversely impact tax collections, and could possibly strain the fiscal maths. So far, the costs of higher oil prices — India's crude basket has soared from \$69 in February to \$147.24 per barrel on March 24 — were being borne by oil companies. According to the petroleum ministry, "the combined daily under-recovery being absorbed by OMCs (oil marketing companies) is approximately Rs 2,400 crore". The latest move will help to partially offset their under-recovery, and provide some respite to their financial position — shares of companies like Indian Oil Corporation, Hindustan Petroleum Corporation and Bharat Petroleum Corporation rose during early trading, but fell thereafter. Prices at the pump, however, remain unchanged.

The petroleum sector accounts for a significant share of government revenues at the Centre and in the states. In 2024-25, the sector's total contribution to the exchequer stood at Rs 7.4 lakh crore, of which Rs 4.15 lakh crore flowed to the central government, with the balance Rs 3.25 lakh crore accruing to the states as per data from the Petroleum Planning and Analysis Cell. This includes revenue from taxes and duties imposed as well as dividends, royalty and other taxes accruing to governments. In Union Budget 2026-27, the government had pegged collections from just the special additional excise duties levied on motor spirit (petrol) and high-speed diesel oil at Rs 1.69 lakh crore. But it is difficult to accurately estimate the extent to which government's revenues will be hit. As per a note from SBI research economists, the central government "is likely to suffer a net revenue loss of at least Rs 1.1 lakh crore in FY27". The 10-year bond yield has risen to 6.925 per cent, pointing towards concerns over the fiscal maths.



The longer the conflict in West Asia continues, the greater will be the pain felt by economies across the world. With supplies getting disrupted, countries in Asia are already implementing policies such as work-from-home in order to curb energy consumption. The Indian government has now imposed an export tax on diesel in order to disincentivise exports, and ensure that domestic demand is met. But the question is: For how long will retail prices not be affected? While there are compelling considerations of the political economy that must be taken on board, if global crude prices remain elevated for long, the calculus will change.

## AS WAR DRAGS ON, RBI MAY HAVE TO CHOOSE BETWEEN FOREX RESERVES AND RUPEE VALUE

Earlier this week, the Reserve Bank of India (RBI) said India's foreign exchange reserves "remain adequate to provide cushion against external shocks". The central bank's assurances are crucial: so far in March, a net \$12.1 billion worth of Indian shares have been sold by foreign investors – the highest monthly figure ever. This has dragged down the rupee to a new record low almost every other day.

### Key Takeaways:

- At their current levels – \$710 billion as on March 13 — the forex reserves are not far from the record of \$728 billion that was hit at the end of February. However, this figure requires a lot of unpacking.

- The RBI can stop the rupee from falling in two ways.

—The first involves the central bank selling FX in the 'spot' market. This reduces the forex reserves immediately and helps the currency strengthen or not weaken further. But defending the rupee this way has an inadvertent impact on the domestic financial system: when the RBI sells FX, it gets rupees in return. This reduces rupee availability – or liquidity – in the Indian financial system and drives up interest rates. Which is why the central bank also sells FX in the 'forward' market: it gets the desired result – the rupee is defended – but not the undesirable indirect impact on interest rates. How? Because the RBI doesn't have to immediately deliver the FX, but at a future date, rupee liquidity is not tightened.

- As per latest data for the end of January, the RBI had net sold \$68 billion of FX in forwards. This figure has likely increased in the last two months considering the rupee has been under severe pressure in March. However, the RBI's FX assets must be adjusted for these forward sales. Even if one conservatively assumes the figure to have remained at \$68 billion, the FX assets number reduces to under \$500 billion.

### Do You Know:

- India's forex reserves have four components: foreign currency (FX) assets, gold, Special Drawing Rights (SDRs), and the Reserve Tranche Position with the International Monetary Fund (IMF).

- SDRs are a buffer of sorts for IMF members, who can exchange it for currency when they are in trouble. The value of SDRs is based on a basket of five currencies – the US dollar, the euro, the Chinese renminbi, the Japanese yen, and the pound sterling. As of March 13, India's SDR holdings were worth \$18.7 billion. The reserve tranche position with the IMF is akin to an emergency line of credit. India's reserve position is worth \$4.8 billion.



- As such, the real heft in India's forex reserves only comes from holdings of FX assets (\$556 billion) and gold (\$131 billion). However, selling gold for the RBI is a last resort – like it was the case during the Balance of Payments (BoP) crisis of 1991 the central bank can't sell its gold on a day-to-day basis to defend the rupee.

## INDIA EYES LOCAL CURRENCY PAYMENTS FOR WEST ASIAN OIL

The Centre is “experimenting” with conducting trade with the West Asian countries in local currencies, in a bid to mitigate the fiscal double-hit of surging oil prices and a depreciating rupee, according to two senior officials in the government. Another objective is to save on currency conversion costs.

If this fructifies, it would mean India would be paying for about 80% of its oil imports using local currencies rather than the U.S. dollar. “India is working out a mechanism to pay for imports from the GCC [Gulf Cooperation Council] countries in local currencies,” a senior government official told *The Hindu*.

### Triggers for alternatives

The triggers for this move, he explained, were the upward spiral of oil prices and the downward spiral of the rupee.

The price of the Indian basket of oil — which is a weighted average of the prices of various types of oil from Oman and Dubai and of Brent crude — stands at \$123.15 per barrel currently, as per government data. This is up from an average of \$69 per barrel in February 2026.

Simultaneously, the rupee touched an all-time low of ₹94.1 against a dollar earlier this week, before settling slightly higher. The exchange rate was at about ₹91.3 per dollar before the Iran war broke out.

A combination of these two factors has meant that Indian importers have had to pay much more for each import transaction conducted in the U.S. dollar, especially for oil.

According to another official in the Ministry of Commerce and Industry, the other advantage India will see through such a local currency mechanism, is a drastic reduction in currency conversion charges.

“It is an experiment on which we are working,” the second official said. “Primarily to save on the cost of currency conversion at several stages.

Each conversion costs about 1-2% of the total transaction value, and so about 5-6% will be saved if we just deal in local currencies, which is a lot when it comes to high value transactions,” he added.

India currently already pays for Russian oil using a combination of local currencies and dirhams. Russia accounted for 30.4% of India's oil imports in the April 2025 to January 2026 period.

The GCC countries account for another 49%.

Moving away from using the dollar for such high value transactions might, however, attract American ire. The U.S. President Donald Trump has in the past threatened a 100% tariff on countries looking to adopt alternate currencies to the dollar.



The U.S. Supreme Court's decision might have removed this threat, but Mr. Trump's determination to use tariffs as a compulsion tool remains.

## GRIM FUTURE

The economy has recently been yielding some discomfiting data, even before the war in West Asia began. The most recent of these was the February 2026 data on the Index of Eight Core Industries. This release showed that growth in the overall Index had dropped to a three-month low in February, half the rate of what it saw in January. This was not a case of a high base effect, either, with growth in February 2025 having been just 3.4%. The sector-wise data reveal further issues. The domestic crude oil industry has been contracting for six consecutive months. In fact, the sector has contracted in 20 out of the last 24 months. The natural gas sector, too, has contracted for the last 20 consecutive months. As context, from about the middle of last year, it had been increasingly clear that there would be some sort of escalation between the U.S. and Iran, even if the exact nature of the war now could not have been predicted then. It is no secret that India is highly dependent on energy imports, especially from the region that would have faced the brunt of any such escalation. As a matter of fact, a large part of the contraction in domestic production was likely because imports were coming cheap. Yet, as tensions increased, it might have been more prudent to have increased domestic oil and gas production over the last eight months so as to at least build reserves, if not to also temporarily reduce import dependence. Permanently reducing such dependence will take time, but a temporary domestic production push — as is belatedly underway — might have considerably alleviated the current supply crunch. Hindsight is 20-20, but that does not excuse a lack of foresight or an inability to learn. The Pradhan Mantri Ujjwala Yojana of 2016 should have triggered a concerted policy to secure LPG supplies and reserves.

This poor core sector performance comes on top of the new series of GDP data showing that the Indian economy is actually smaller than previously thought. Further, between 2022-23 and 2025-26, the contributions to GDP of key engines such as private consumption, capital formation, exports and imports have all fallen. The share of 'change in stocks' has nearly doubled, however, meaning that there is production but not enough sales. Soon, that production too will reduce to fall in line with the subdued demand. All of this leads into the impact of the current crisis. With commercial fuel sources curtailed, oil prices at more than \$100 a barrel, and global economic uncertainty at a high, economists and rating agencies are already downgrading India's growth outlook to about 6.5%. Perhaps, India's much-vaunted macroeconomic fundamentals and resilience need a more realistic assessment.

## MAPPING THE LAG IN INDIA'S INFORMAL ECONOMY

The results of the Annual Survey of Unincorporated Sector Enterprises (ASUSE) for 2025, by the Ministry of Statistics and Programme Implementation (MoSPI), make for a sobering read. The survey aims to map the changes in India's informal sector for a given calendar year — essentially, the informal sector refers to the unincorporated non-agricultural enterprises. On the face of it, ASUSE 2025 shows that both the number of enterprises in this sector as well as the number of people employed in it have grown. The total number of establishments in the sector increased from 7.34 crore in ASUSE 2023-24 (October 23-September 24) to 7.92 crore in ASUSE 2025 (January 25-December 25). This is an increase of almost 8 per cent, which MoSPI describes as "healthy". The sector also saw 74.5 lakh more people getting employed, taking the number of the total employed to about 12.8 crore workers during the January-December 2025 period. This is an increase of 6.2 per cent and has been flagged as "robust labour market expansion" by the MoSPI.



However, a closer look at these numbers reveals a fair degree of sluggishness in the informal economy. For instance, Gross Value Added (GVA) per worker, which is a measure of labour productivity of the sector, rose by just 4.5 per cent to reach the level of Rs 1.56 lakh in 2025. The GVA per establishment grew even slower at 2.85 per cent to Rs 2.52 lakh. Given the muted increase in GVAs, it is hardly surprising that the earnings per hired worker increased by just 3.9 per cent — a sharp fall from the 13 per cent increase between the 2023 and 2024 survey periods. Even the number of new jobs created in this sector in 2025 (74.5 lakh) is far lower than the new jobs created in 2024.

ASUSE estimates serve as an important input not just for the estimation of India's overall gross domestic product (GDP) but also for policymaking, especially for departments and ministries related to micro, small and medium enterprises (MSME), textiles, etc. What this data shows is that in a period when the overall GDP of India grew at close to 9 per cent (in nominal terms), the informal sector's growth and growth in the value creation by an average worker lagged behind. The data underscores the need for India to continue to bring more people into the formal sector, apart from highlighting the concerns of firms in the informal economy.

#### SEBI BOARD OKAYS CONFLICT OF INTEREST PANEL'S KEY RECOMMENDATIONS

The Securities and Exchange Board of India (SEBI) has decided to approve key recommendations of the High Level Committee on Conflict of Interest.

According to the board, the recommendations include bringing the chairperson and whole time board members within the definition of an 'insider', establishing digital systems for conflict-of-interest management and a new office of ethics and compliance to oversee public issues. SEBI also recommended notifying separate regulations for board members and an oversight committee on ethics to oversee board members.

Another major regulatory change approved was to simplify 'fit and proper person' norms for intermediaries, which include depositories, clearing houses and exchanges. Accordingly, members of intermediaries would be disqualified only on conviction for economic offences or securities law violation. However, grounds for disqualification would also include offences involving moral turpitude.

The board also decided Foreign Portfolio Investors (FPIs) will now be allowed to settle funds on a net basis for stock market transactions viz. payment for a stock FPIs buy would be adjusted against the proceeds of the stock it sells.

Earlier, FPIs had to pay for the stock they bought in full and receive payment for the stocks they sold.

#### **Cutting cost**

When FPI outflows had crossed ₹88,000 crore in March alone, SEBI Chairman Tuhin Kanta Pandey assured new FPI registrations continued in response to steps easing their operations and cutting cost. The board also reduced minimum investment value for social impact funds in Alternative Investment Funds to ₹1,000 from ₹2 lakh to boost retail participation.



## LOK SABHA SENDS CORPORATE LAW AMENDMENT BILL 2026 TO JPC

The government introduced the Corporate Laws (Amendment) Bill, 2026 in the Lok Sabha following which the House adopted a motion to send the proposed legislation to a Joint Parliamentary Committee (JPC) for detailed examination.

The JPC will comprise members from both Houses of Parliament for detailed analysis and recommendations, Union Finance Minister Nirmala Sitharaman said while proposing the motion for JPC reference. The motion was adopted by a voice vote.

The Bill seeks further amendments to the Limited Liability Partnership Act, 2008 and the Companies Act, 2013 to facilitate ease of doing business and address the gaps identified by the Company Law Committee in its 2022 report.

The proposed amendments are expected to rationalise penalties, shift several minor procedural lapses from criminal liability to monetary penalties, and streamline regulatory processes to promote ease of doing business.

The FM said the Bill was aimed at promoting ease of doing business and ease of living for corporates by decriminalising more provisions.

### 'Diluting provisions'

When the Bill was introduced in Lok Sabha, Opposition members Manish Tewari (Congress), Saugata Roy (Trinamool Congress) and T. Sumathy (DMK) opposed the same claiming the legislation sought to dilute the provisions of law under which companies mandatorily had to pay 2% of profit towards corporate social responsibility (CSR).

The FM refuted the claim and said that the Bill had been introduced after two years of deliberations and the apprehensions of the members were unfounded as the proposed legislation sought to amend only the criteria for net profit, not the entire clause related to CSR.

Mr. Tewari also said since a Parliamentary Standing Committee on Corporate Affairs was already in place, the Bill must be sent there rather than setting up new JPC.

Home Minister Amit Shah, intervening, said none of the Opposition members talked about referring the Bill to a panel and now, when the FM has herself sought it, they were arguing as to which panel the Bill should be sent.

## WOMEN SAW HIGHER WAGE GROWTH THAN MEN ACROSS ALL JOB TYPES IN 2025: GOVT

Wages for women rose at a faster pace than for men across all three categories of jobs in 2025, according to the statistics ministry's Periodic Labour Force Survey (PLFS) for the last calendar year, released on Friday.

### Key Takeaways:

— According to the data, 2025 saw earnings of females rise 7.2%, 8.8%, and 5.4% for salaried jobs, self-employment, and casual labour, respectively, compared to 2024. Meanwhile, earnings for males posted a growth of 5.8% and 8% for salaried jobs and self-employment, respectively, but fell by 0.2% for casual labour.



— To be sure, women continue to earn much less than men. In salaried jobs, females in 2025 earned only 76% of what males earn, little changed from 2022. Meanwhile, in casual labour, income inequality saw slight improvement in 2025, with females earning 69% of what males did, up from 66% in 2024.

— Women, however, fare the worst when it comes to self-employment, earning only 36% of what males earn, the PLFS data showed.

— In another positive development, the PLFS – the Indian government’s flagship jobs survey – showed that the proportion of women in salaried jobs rose to 18.2% in 2025 from 16.6% in 2024, with the fraction in self-employment declining to 64.2% from 66.5%. Casual labour saw an increase to 17.6% from 16.9%. The trend was somewhat similar for males.

— At an all-India level, the proportion of employed with salaried jobs rose to 23.6% from 22.4% in 2024.

— Salaried jobs are indicative of higher-quality employment as they provide social security cover, among other benefits.

— The PLFS data for 2025 comes days after the Ministry of Statistics and Programme Implementation (MoSPI) made public the results of its Annual Survey of Unincorporated Sector Enterprises (ASUSE), which showed that pay in India’s informal sector rose by just 3.9% in 2025, less than half the 13% increase seen in 2023-24 (October-September).

— At the same time, the informal sector saw a sharp reduction in the number of establishments it added, leading to far fewer workers being hired. As per the ASUSE survey, the number of establishments increased by 58.5 lakh, down from an increase of 83.5 lakh in 2023-24, to 7.92 crore.

— As a result, fewer jobs were created: 74.5 lakh in 2025 compared to 1.1 crore in the 12 months ended September 2024.

— Unemployment among the youth – or persons in the 15-29 years age bracket – declined to 9.9% in 2025 from 10.3% the previous year, although female youth unemployment edged up to 11.3% from 11.1%.

— Usual status (ps+ss) refers to the method used to measure labour market activity, with ‘ps’ standing for Principal Status and ‘ss’ for Subsidiary Status. The estimate of the labour force in the usual status includes people who either worked or were available for work for a relatively long part of the 365 days preceding the date of survey as well as those persons among the remaining population who had worked at least for 30 days during the reference period of 365 days preceding the date of survey.

**Do You Know:**

— The PLFS provides data on different metrics so that policymakers can understand the proportion of people demanding work, the proportion of people among them who failed to get a job, the gender differences in employment, as well as wages.

— The PLFS also tells the sectoral distribution of workers in the economy — what percentage is involved in agriculture, for instance. It also records the type of work people do — for instance,



how many are engaged in casual labour, how many work for themselves, and how many have regular salaried jobs.

## FINANCE, MANAGEMENT, LEGAL SECTORS: THE JOBS THAT AI IS MOST LIKELY TO REPLACE

Anthropic has just come out with a rigorous labour market study in Artificial Intelligence (AI), which introduces a new measure for understanding the labour market effects of AI and studies impacts on unemployment and hiring.

### Key Takeaways:

- Jobs are more exposed to AI to the extent that their tasks are theoretically feasible with LLMs, with computer programmers, customer service representatives, and financial analysts cited as among “the most exposed”.
- Even though the current usage of AI is limited in some sectors, Anthropic found that AI can theoretically cover a majority of tasks in sectors like business and finance, management, computer science, math, engineering, legal, and office administration roles.
- In contrast, the company said that sectors like construction, agriculture, protective services, and personal care, among others, may have a limited theoretical use of AI, and therefore, jobs in these sectors could be more insulated from the impact of AI than some others.
- This finding shows one key thing: that even though AI is theoretically capable of doing almost all tasks in some sectors, its current usage is limited. For instance, for computer and math workers, large language models are theoretically capable of handling 94% of their tasks. But Claude currently only covers 33% of those tasks in observed professional use.

### Do You Know:

- The researchers combined three data sources to build a picture of which jobs are most at risk:

First, they used the US government’s occupational database to map out every task associated with around 800 jobs. Second, they juxtaposed it with existing academic measures of which tasks AI could theoretically speed up significantly. Third, and most importantly, they cross-referenced this against real Claude usage data to see which tasks people are actually using AI for in professional settings today, weighting fully automated use more heavily than assisted use.

The result is a measure they call “observed exposure”: not just what AI could theoretically do, but what it is demonstrably already doing at work.

- The data also shows how some demographics can be more at risk than others. Workers in the most AI-exposed professions differ significantly from those in unexposed roles. The data indicates that highly exposed workers are more likely to be:

—Female: 54.4% of the most exposed group is female, compared to 38.8% of the unexposed group.

—Highly educated: Those with a Bachelor’s degree or higher are disproportionately represented. For instance, workers with graduate degrees are nearly four times more likely to be in the most exposed quartile than the unexposed group.



—White or Asian: White workers make up 65.1% of the high-exposure group (vs. 54.5% of the unexposed), and Asian workers are nearly twice as likely to be in the most exposed group. Hispanic and Black workers are less represented in high-exposure roles.

—Older: The average age of highly exposed workers is slightly higher (42.9) than those in unexposed roles.

- For Indian IT companies, the implications are particularly acute. Their business model has long depended on providing services—data processing, contract analysis, compliance monitoring, customer support—that AI tools can now potentially automate. Anthropic’s announcement includes specialised tools for legal workflows such as contract review, NDA analysis, and compliance monitoring, as well as applications in finance, sales, and data analytics.

## WHY DO ELECTRIC VEHICLE BATTERIES CATCH FIRE?

### The story so far:

A fire tore through a house in Indore on March 18, killing eight people, including two children. An electric vehicle (EV) charging point outside appeared to have sparked the blaze. An investigation is underway.

### Are EV batteries safe?

Nearly every EV on the road runs on lithium-ion batteries, which use the same chemistry that powers millions of smartphones and laptops. They pack more energy than lead-acid batteries and are generally safe when managed well.

A common cause of EV battery fires is thermal runaway. A lithium-ion battery packs thousands of cells tightly together, each generating heat as it charges and discharges. Normally, an onboard computer called the battery management system keeps the temperature within a safe range. But if something goes wrong, one cell can overheat, causing neighbouring cells to overheat in a chain reaction that can outpace the cooling system. This process releases a toxic cocktail of gases, including hydrogen fluoride, in a flammable vapour that eases the ‘path’ to a fire.

### What causes thermal runaway?

Manufacturers protect battery packs by packing them inside shells of reinforced steel or aluminium. However, a hard impact — like from a strong impact to the undercarriage — can deform the casing and puncture or deform the cells inside, leading to a short circuit.

Charging a battery beyond its designed capacity can force charge to build up in the ‘wrong’ places inside cells. Reputable EV manufacturers include safeguards in their charging systems to prevent this but third-party or damaged chargers may not pay attention to these limits. And regularly charging a battery overnight with such a charger can increase the risk.

As the battery expands and contracts during use, rare manufacturing defects such as a small protrusion of metal can bring the positive and negative electrodes in touch, causing an enormous current to flow between them. This releases heat that then spreads through the pack. Extension cords or domestic wiring in old buildings can also overheat when they cannot handle the sustained current.



### Do external conditions matter?

In hot weather, the cooling system can struggle to shed heat. Parking an EV in direct sunlight for long periods or charging it immediately after a long drive can add to the thermal stress.

As batteries age, their internal components also degrade. So users who ignore warning lights or skip inspections can miss early signs of swelling or chemical decomposition.

Flooding also threatens batteries. The contaminated water after heavy rains can infiltrate a battery pack and cause short circuits. Several EV fires have occurred in the days after vehicles were submerged in floodwater.

EVs are not uniquely dangerous. Petrol cars catch fire too, and more often, as they carry flammable fuel next to an engine running at a high temperature. The difference is that EV battery fires burn hotter, spread faster, and are harder to put out (as the battery releases oxygen as it burns).

The Indore incident was made worse by the fact that LPG cylinders were stored in the house, a sports bike was parked inside, and electronic door locks jammed when the power failed.

### What are industry and users doing?

Most EVs today have channels alongside the cells filled with a coolant that absorbs their heat and dissipates it into the air. Scientists are currently developing a new form of cooling where the coolant evaporates as it absorbs heat and releases it into the air, improving heat transfer and handling temperature spikes better.

Manufacturers are also exploring batteries with a solid electrolyte rather than the current liquid to reduce the risk of a thermal runaway, while refining firewalls inside existing designs so that if one cell fails, the fire does not spread.

Users can also take precautions by using the charger that came with the vehicle or one certified by the manufacturer, avoiding routine unattended charging, ensuring home electrical systems meet the necessary standards for high-power appliances, and having EV batteries inspected after any significant impact. Experts have recommended letting batteries cool after a long drive before charging and also keeping the charging area clear.

The Bureau of Indian Standards released updated safety norms for EV batteries in 2023 after a spate of fires the previous year prompted a government review. As part of its AIS-156 standard, the Automotive Research Association of India also requires tests to check how heat propagates in a battery and requires battery packs to give a vehicle's users at least five minutes to escape before a fire.

## HOW AGRIPV CAN TURN INDIA'S FARMS INTO DUAL-PURPOSE POWERHOUSES

In the 2026-27 Budget, the outlay for the PM-KUSUM scheme nearly doubled to ₹5,000 crore, signalling the government's renewed emphasis on increasing solar power production centred on India's farmers. Specifically, the scheme aims to provide energy and water security to farmers, enhance incomes, and decarbonise the farm sector through decentralised solar pumps and power plants.

But as the scheme evolves, India also faces a question: how can solar be expanded on agricultural land without compromising food security?



Agri-photovoltaics (agriPV) is emerging as a promising answer to this question. AgriPV integrates solar systems with farming, allowing farmers to generate electricity and cultivate crops on the same parcel of land. The panels are mounted at a suitable height to allow farm operations below, and are spaced between crop rows or integrated into greenhouses to minimise conflict between agricultural production and energy generation.

### Selecting right crops

The designs vary by crop and region. Elevated systems have panels mounted a few metres above ground to allow crops to grow below. Row-based systems have panels positioned between crop rows to minimise shading. Vertical systems use upright panels that can capture sunlight from both sides. Greenhouse-integrated systems feature solar panels on roofs or walls to maintain a controlled growing environment. The suitability of a design also depends on the local climate, irrigation practices, and the crop. So systematic and region-specific planning is essential to optimise both agricultural and energy yields.

Careful crop selection is also key to the success of agriPV systems because the amount of sunlight available changes based on how solar panels are placed. Shade-tolerant crops generally perform well in partially shaded areas under solar panels while crops that need more sunlight grow better in the spaces between rows of panels.

Crop selection also varies across India's diverse agro-climatic regions. For instance, suitable crop options include tomato, onion, garlic, turmeric, ginger, leafy vegetables, and tulsii in Madhya Pradesh, and ragi, jowar, grapes, tomato, potato, chillies, banana, and brinjal in Karnataka and Maharashtra — all of which can perform well in agriPV systems.

Beyond technical considerations such as crop selection, the scalability of agriPV hinges on developing viable business models. Farmers can own and operate agriPV systems, use a portion of the electricity generated, and sell the surplus. With the help of Farmer Producer Organisations or cooperatives, multiple farmers can also aggregate land and collectively develop projects, enhancing their bargaining power and access to finance.

Private developers could also lease farmland and share revenues or pay fixed rents to farmers. Alternatively, State governments or public agencies could develop agriPV systems to support local energy needs.

### Why agriPV matters for India

India's ambitious energy transition goals — to have 300 GW of installed solar capacity by 2030 and achieve net-zero emissions by 2070 — put land at a premium. Utility-scale solar projects require large tracts of land while agriculture is already under pressure from competing land uses.

AgriPV can ameliorate this conflict. With more than half of India's land under agriculture, dual-use deployment is valuable. And in an economy that depends heavily on agriculture, the technology's appeal lies in both farmers diversifying their incomes and producing clean energy. Farmers can earn from selling electricity, leasing land or sharing revenues while continuing to cultivate.

AgriPV also delivers environmental co-benefits. In certain agro-climatic conditions, partial shading can reduce evapotranspiration — the combined loss of water to the atmosphere through evaporation and plant transpiration — and soils retain more moisture, thus enhancing the overall water-use efficiency. Solar panels can also protect crops against extreme heat, rainfall, and hail.



By lowering the farm's need for diesel, such systems can also support rural entrepreneurship and local economic growth. AgriPV can power ancillary services as well, including cold storage, food processing units, and chaff cutters, strengthening rural value chains. However, this requires clear governance frameworks, tariffs, and accessible finance.

#### **Status in India**

There are around 50 pilot agriPV installations nationwide, with various panel-crop combinations and economic feasibility under evaluation. Recent policy discussions have also increasingly referenced agriPV but large-scale replication has yet to commence. Both policymakers and experts need more empirical evidence across agro-climatic zones to say which configurations, crop matrices, and financial frameworks are most suitable.

The technology's large-scale adoption in India does face economic, regulatory, and institutional barriers. Elevated structures and specialised mounting systems significantly increase capital costs, well above those of conventional solar systems. A crop's responses to shading can vary and poorly designed systems may even reduce agricultural yields.

System ownership between farmers and developers could also raise doubts, particularly if long-term land rights and revenue-sharing arrangements are not fully clear. Land classification, grid connectivity, and tariffs hinge on regulatory clarity and the lack of design benchmarks adds to investor uncertainty.

#### **Policy pathways**

With the right policy support, agriPV has the potential to scale beyond pilot projects. Recent consultations on PM-KUSUM 2.0 have indicated that the government may include agriPV in a proposed 'National Agri-photovoltaics Mission' as a dedicated 10-GW component, with viability gap funding to offset the capital costs. Such measures could remarkably improve the bankability of agriPV projects and reduce the financial risk. Clearly recognising dual-use configurations within PM-KUSUM 2.0 could help align agriPV with farmer-centric solarisation. States can reinforce this by identifying suitable clusters, streamlining approvals, and integrating agriPV into farmer training and advisory programmes.

As India rapidly advances in its energy transition, agriPV offers a pathway for renewable energy to complement agricultural productivity. Its inclusion under PM-KUSUM 2.0 could move it from scattered pilots to a more structured, scalable model, strengthening farmer incomes and easing land pressures.



## LIFE AND SCIENCES

### MPC: CONFIRMING NEW MOONS

Last week, the Minor Planet Centre (MPC) announced 15 new moons had been found, four around Jupiter and 11 around Saturn. The Jovian moons were found by the U.S.-based Scott Sheppard and David Tholen and the Saturnian ones by a team led by Edward Ashton in Taiwan.

The MPC is the world's primary repository for all observations of small bodies in the solar system. Located in Cambridge, Massachusetts, it operates at the Smithsonian Astrophysical Observatory under the International Astronomical Union, and plays a vital role in tracking asteroids, comets, and the moons of the outer planets.

When astronomers discover a new object, they send their data to the MPC, where experts verify the observations and calculate the object's orbit. If the discovery is new, the MPC assigns it an official designation. This process ensures every known minor planet has a unique identity and a predictable path.

One of the MPC's most critical jobs involves monitoring near-earth objects (NEOs). NEOs are space rocks that could potentially threaten the earth. With support from NASA's Planetary Defense Coordination Office, MPC maintains a large database that allows scientists to predict if and when a rock might come close to the earth.

The MPC also facilitates communication within the global scientific community by publishing electronic circulars that alert researchers to new discoveries or interesting celestial events. These updates allow observatories worldwide to coordinate their efforts and gather more data quickly.

### QUANTUM TEST SHOWS CAUSE, EFFECT NEED NOT FOLLOW A SET ORDER

In everyday life, cause always comes before effect. A window won't break before you throw a ball at it. But quantum mechanics has long hinted that this rule can be broken. Physicists from the University of Vienna and the Christian Doppler Laboratory for Photonic Quantum Computer have now taken a big step to proving it in an experiment.

Their results were published in *PRX Quantum* on March 17.

Quantum systems like atoms or electrons can exist in superpositions: a particle can be in two states at once until it is measured. When causality itself works the same way — e.g. if A happens before B and B happens before A at the same time — it's called indefinite causal order (ICO).

Scientists have shown ICO can be used to increase the performance of quantum key distribution — a technology scientists worldwide, including recently at IIT-Delhi, are exploring to make communications unhackable.

But before anyone can build technology around it, physicists need proof that ICO is a real phenomenon.

In standard causality, it's impossible for an experiment to score higher than 1.75 on a mathematical test called VBC.



If it's higher, the experiment has ICO. The researchers created pairs of light particles (photons) and sent them through a quantum switch. The switch applied two operations to the photons but in a blurred order: neither operation was definitively first. When the team measured the photons that exited, the test's VBC score was 1.83.

The photons were correlated with each other in a way that couldn't be explained by anything happening to them in a fixed sequence. For instance if the photons had gone through operation A then B or B then A, their properties at the end would be correlated up to a certain degree. But the experimenters measured photons whose properties were correlated in a way that couldn't exist unless there was no fixed order in which the operations happened. The alternative: the photons were in a superposition of both orderings at once.

The researchers were candid that their experiment had loopholes that prevented the result from being dispositive. For instance, because the experiment happened on a single table, it is not yet possible to rule out that some unknown signal travelled between the components to mimic the result.

Closing such loopholes will require separating the participants by much larger distances and improving detection efficiency.

#### NEW WAY HELPS SUPERCONDUCTOR BREAK TEMPERATURE RECORD'

In a significant scientific milestone reported in March 2026, physicists at the University of Houston have shattered a 33-year-old record for high-temperature superconductivity at ambient pressure. Led by veteran researcher Professor Ching-Wu Chu and his colleague Liangzi Deng at the Texas Centre for Superconductivity (TcSUH), the team achieved a critical transition temperature (**T<sub>c</sub>**) of **151 Kelvin** (approximately -122°C) in the mercury-based cuprate material  $\text{HgBa}_2\text{Ca}_2\text{Cu}_3\text{O}_{8+\delta}$ , commonly known as Hg-1223. This breakthrough, published in the *Proceedings of the National Academy of Sciences*, raises the previous ambient-pressure record of 133 K (set in 1993 for the same compound) by 18 K, marking the highest superconducting temperature ever observed without extreme external pressure since the discovery of superconductivity in 1911.

The innovation lies in a technique called **pressure quenching**. Researchers placed the Hg-1223 sample in a diamond anvil cell, subjecting it to enormous pressures—up to 300,000 times atmospheric levels—before rapidly releasing the pressure. This process “locks in” a metastable phase of the material, preserving enhanced superconducting properties even at normal atmospheric conditions. Samples maintained superconductivity for up to two weeks after the quench, with the highest **T<sub>c</sub>** reaching 151 K. Unlike hydride superconductors that boast higher **T<sub>c</sub>** values (such as around 250-260 K) but require immense pressures incompatible with practical use, this advance operates at everyday pressure, bringing applications one step closer to reality.

For India, this development carries profound implications. Our nation grapples with massive energy demands, transmission losses exceeding 20 per cent in some grids, and ambitious targets for renewable integration under the National Green Hydrogen Mission and net-zero goals by 2070. Superconductors enable lossless power transmission, highly efficient transformers, generators, and magnetic energy storage. A material superconducting at -122°C could reduce reliance on costly liquid nitrogen cooling (which works around 77 K) and pave the way for more affordable cryogenic systems. In a country like ours, with vast rural electrification needs and



growing urban power infrastructure, even incremental gains toward room-temperature superconductivity could revolutionise the sector, slashing costs and emissions.

Professor Chu, who earlier contributed to the 1987 discovery of YBCO superconductors, emphasised that while 151 K is still about 140°C below room temperature (300 K), the pressure-quench method opens a promising new pathway. The team believes further optimisation could push  $T_c$  higher. This comes amid global efforts, including hydride research under extreme pressure, though ambient-pressure progress remains the holy grail for scalable technology. Past hype around claims like LK-99 in 2023, later debunked as non-superconducting, underscores the need for rigorous verification—something the Houston work has received through peer-reviewed publication and multiple confirmations.

Critics may note that true room-temperature superconductivity at ambient pressure remains elusive, and commercial deployment could take years. Yet, this record-breaking feat revives optimism. It demonstrates that persistent, clever experimentation on known cuprates can yield breakthroughs without exotic new materials. For Indian scientists at institutions like the Tata Institute of Fundamental Research or IITs, it signals opportunities for collaboration and indigenous research in advanced materials.

In an era of climate urgency and technological sovereignty, such advances remind us that science moves in deliberate steps. The Houston breakthrough is not the final destination but a vital milestone on the long road to lossless energy. India must invest more in superconductivity research, foster public-private partnerships, and train young physicists to seize this momentum. If we do, the day when power flows without resistance across our vast nation may arrive sooner than we imagine—transforming economies, sustaining growth, and lighting up a greener future.

#### SURPLUS HEAT IS THE NEW CLIMATE CHALLENGE

The World Meteorological Organisation's (WMO) latest State of Climate Report confirms the agency's findings over the last 10 years. The decade that ended last year was the hottest on record. The carbon dioxide in the atmosphere is about 50 per cent higher than pre-industrial levels. In 2025, even as renewable energy edged out coal as the leading source of electricity, global emissions reached record levels. Even though clean power has registered an appreciable increase, it's nowhere close to keeping pace with the world's appetite for energy. All this means that the concentration of carbon dioxide reached its highest level in the last 2 million years, and methane and nitrous oxide in at least the last 800,000 years. In itself, these are sobering figures. The WMO report adds another worrying dimension – the record levels of GHG have upset the Earth's energy equilibrium. Ideally, the amount of radiation entering the planet and the amount of it leaving it should be roughly similar. But a heat surplus has accumulated in the past six decades. That means that even if GHG emissions were to completely stop anytime soon, the planet will continue to warm.

Since water can store large amounts of heat, the seas and oceans have become the main repositories of the extra energy trapped by GHGs. The total effects on oceans are not fully understood. But some of them are apparent. As the authors of the WMO report point out, warmer oceans create conditions for stronger tropical storms. At the same time, melting ice is pushing up sea levels and weakening the planet's ability to reflect solar radiation back into space, aggravating the energy imbalance in the process.



Incremental changes are unlikely to change the trajectory of extreme weather events. Therefore, even as they devote resources towards green methods of production, planners must find ways to make infrastructure more resilient, invest more in early warning systems and shield the vulnerable. The energy imbalance could unfold over decades. Policies must, therefore, be stable enough to guide investments and research over long time-scales. The most important message for governments and the political class worldwide is this: They need to find the resolve and creativity to insulate climate policies from short-term politics.

## WAVES IN THE OCEAN

### Where or what is the human mind?

Evidence points to the human mind not being a physical object you can touch, but a process the brain creates.

The foundation of the mind consists of approximately 86 billion nerve cells, a.k.a. neurons. These cells form a large and intricate web where they communicate by sending electrical signals and releasing chemical messengers called neurotransmitters across gaps known as synapses. Glial cells support these neurons by supplying nutrients and maintaining the structure.

However, the mind is more than just a bunch of cells. Most researchers view the mind as an emergent property of the brain, meaning that while individual neurons can't think or feel, their collective interaction produces consciousness and emotions.

For an analogy, if the brain is the hardware of the body, the mind appears to be the software or maybe the active processing unit. It encompasses everything from human logic and language to people's deepest feelings. And research suggests that the mind is quite literally what the brain does.

## WHAT IS MINERAL WATER AND HOW DOES IT NATURALLY CONTAIN DISSOLVED MINERALS?

Millions of people around the world drink mineral water every day because their tap water is unsafe or because they prefer the taste. It's packed with naturally occurring minerals that support bone and muscle health and governments and health organisations promote it as a clean, reliable source of hydration.

### What is mineral water?

Mineral water is water that naturally contains dissolved minerals and trace elements. It comes from a protected underground reservoir, like a spring or aquifer, and has a specific composition of minerals. Unlike ordinary tap water, which treatment plants produce by filtering and purifying water drawn from rivers or groundwater, mineral water retains the natural minerals it has acquired from geological processes it has been a part of over years, decades or even centuries.

As rainwater and snowmelt slowly percolate through layers of limestone, granite, sandstone or volcanic basalt, the minerals from the surrounding rocks dissolve in the water, and the differences in pressure underground push this enriched water back towards the surface, where it emerges as a spring or collects in a subterranean reservoir. Producers then drill wells or tap natural springs and flow the water into containers, using pumps if required.



### How is mineral water regulated?

The U.S. Food and Drug Administration (FDA) and the European Parliament and the Council both have regulations that stipulate that mineral water must come from a geologically stable source, which producers must undertake to protect; that separate batches of the same water must have the same profile of minerals; and that producers must not chemically treat it to alter its mineral composition.

In India, the Food Safety and Standards Authority of India (FSSAI) and the Bureau of Indian Standards (BIS) stipulate that natural mineral water must come from underground sources such as natural springs and borewells, must be protected by various formations that ensure the water is free from pollution, and should ideally be collected in conditions that guarantee the original bacteriological and chemical composition.

As in the U.S. and the EU, the BIS standard IS 13428 requires the water's TDS and the relative proportions of various minerals to be stable over time and across producers' batches. Producers are also prohibited from treating the water to change its mineral composition, and instead are only allowed to filter or decant it, aerate it, and sterilise it. Chemical decontamination, such as by adding chlorine, is also disallowed.

Finally, unlike many food products in India, mineral water requires mandatory certification: to sell mineral water, producers must have both an FSSAI license and a BIS certificate and every bottle must carry the ISI mark (according to IS 13428). The FSSAI also requires the bottle to be labelled with the location and name of the source and the levels of various minerals, and disallows the packager from claiming the water has any medicinal or healing properties.

### How is mineral water packaged?

To meet these strict criteria, producers usually bottle the water directly at or near the source. Once they extract the water, they filter it to remove particulate matter and elements such as iron to ensure the liquid is clear. Producers may also pass it through ultraviolet light for disinfection and adjust the level of dissolved carbon dioxide to produce still or sparkling variants.

Finally, the producers store the water in tanks and package it in glass bottles, PET bottles or aluminium cans at or near the source to avoid contamination or changes in composition. That said, the storage materials come with tradeoffs of their own. For instance, glass is chemically inert and doesn't react with the water but it must be handled with care; PET is light but can leach small amounts of plastic over time, especially when it's hot; and aluminium cans are most recyclable but require an internal plastic lining to prevent the metal from reacting with the water, which reintroduces concerns about chemical leaching and increases costs.

Packaged drinking water is not always the same as natural mineral water. Producers may start with tap or groundwater, purify it through reverse osmosis, then add back small amounts of minerals to improve taste. Similarly, spring water comes from a natural underground source but doesn't need to meet the same strict standards for mineral consistency.

That said, under 'bottled water', the U.S. FDA encompasses Artesian water, mineral water, sparkling bottled water, spring water, and purified water (including distilled, deionised, and/or demineralised water or water that has undergone reverse osmosis). Artesian water is groundwater being pushed to the surface due to pressure created underground by impermeable rocks.



### **What effects do minerals have?**

The minerals present in mineral water depend on its natural source. The most common minerals include calcium, magnesium, sodium, potassium, bicarbonates, sulphates, chlorides, silica, and sometimes fluorides or iron in trace amounts.

Calcium and magnesium make water 'hard' and give mineral water the mouthfeel people are familiar with and have come to expect, including a slight weight and body. Higher calcium levels render a smooth or slightly chalky sensation, while magnesium introduces a subtle bitterness. Similarly, bicarbonates neutralise acidity and give the water an almost sweet finish, sulphates — associated with magnesium-rich springs — add a slightly crisp taste, and sodium imparts a faint saline note.

Dissolved minerals also raise the water's content of total dissolved solids (TDS) and change how it interacts with food, soap, pipes, and tissues, with different chemical and thermal environments (e.g. cooking), and with tissues in the human body. You may know from common experience that harder water deposits 'scales' in kettles and washing machines and doesn't lather well with soap. Its inherent chemical properties also mean hard water supports bone density and aids muscle function, although the contribution of drinking water to these outcomes is generally much smaller compared to nutrition. Bicarbonates may improve digestion.

### **What are other forms of water?**

When water is distilled, it means it is boiled into steam and condensed back to liquid, in the process leaving all dissolved solids, including minerals as well as contaminants, behind in the vessel. As a result the condensed water is nearly pure H<sub>2</sub>O, and tastes very different, almost hollow. It does not form scales on metal surfaces and behaves in the sort of predictable way that research laboratories and diagnostic labs prize.

However, while it is safe to drink, distilled water is not advised for regular human consumption because, aside from being devoid of minerals, it can also draw minerals out of surfaces it comes in contact with, including food and, potentially to a small degree, biological tissue.

Industries also treat water according to their needs. They may soften it to remove calcium and magnesium, deionise it to strip it of almost all dissolved ions or alter its chemistry to use in boilers or cooling systems. They could also demineralise it to prevent scaling and/or add compounds like sodium phosphate to lower its corrosion potential. Industrial water is neither safe nor suitable for human consumption.

To prepare municipal tap water, finally, treatment plants draw water from natural sources like rivers and groundwater, remove pathogens and chemical pollutants by filtering and chlorinating it, and add disinfectants such as chlorine. Unless a local authority specifically softens it, tap water retains its dissolved minerals. Its mineral content varies enormously by region: London's tap water is noticeably hard because it comes from chalk aquifers while many Scandinavian cities supply naturally soft water low in minerals.

### **How is tap water 'made' in India?**

The main source of water that eventually becomes tap water in India is rivers and deep borewells.

Because the pathogen loads are higher in tropical areas, municipalities subsequently disinfect it more aggressively than in temperate or cold regions like North America or Scandinavia. Among



other steps, they add alum to make dirt clump together so that it filters out more easily, and add residual chlorine, meaning more chlorine than what is required to disinfect the water, so that water disinfected at first becomes reinfected later if, say, a leaky pipe exposes it to sewage.

In fact, such 'mixing' is so common that most Indian municipalities don't guarantee potable tap water. Among the few exceptions are Puri in Odisha and parts of Coimbatore in Tamil Nadu.

Tap water is a State responsibility while the Union government sets the standards. The IS 10500:2012 standard prescribes limits for the quantity of minerals in potable water but also has room for variations. For instance, while the TDS limit is 500 mg/l, it can go up to 2,000 mg/l if no alternative source is available.

Rajasthan, Gujarat, and parts of Delhi/NCR have very high mineral content, including calcium and magnesium, because their groundwater lies in aquifers rich in minerals, whereas cities and States drawing water from Himalayan rivers or areas with high rainfall, such as Mumbai and parts of Kerala, have much softer water with lower mineral levels.

#### WEST ASIA CONFLICT: HOW FINDING OIL CHANGED THE PERSIAN GULF'S ECOLOGY

Military ships and oil tankers dominate how we imagine the Persian Gulf today. Yet beyond this familiar imagery of geopolitics and petroleum lies a mosaic of vulnerable ecosystems.

It wasn't always this way. Just six decades ago, these waters were busy not with warships but fishing boats, and the glittering megacities that now line the coast were then little more than fishing villages.

The Gulf coastline is remarkably young. Formed 3,000 to 6,000 years ago as the sea flooded the Arabian basin through the Strait of Hormuz, it is today a shallow, semi-enclosed sea spanning about 226,000 sq. km, with an average depth of just 30 m.

Its shallowness and limited water exchange with the open waters of the Arabian sea drive its extreme conditions. The summer temperatures regularly exceed 35 °C while the high rate of evaporation keeps the water salty to the tune of 44-70 parts per thousand — almost twice as salty as open sea water.

Yet life persists.

##### **Life on the edge**

At the boundary of land and sea lies the intertidal zone — shaped by cycles of exposure and submergence to heat and hypersalinity.

These are dynamic systems where organic matter breaks down and is recycled, helping microorganisms survive in the adjacent waters. Beyond them, lagoons host specialised microbes and commercially important species like shrimp. Mangroves are fish nurseries, migratory bird refuges, and carbon sinks.

The mudflats also sustain shrimp as well as coastal food webs while the offshore seagrass meadows are among the Gulf's most productive ecosystems, proving to be places where fish and pearl oysters spawn.



These meadows are also important feeding grounds for sea turtles. Five of the world's seven sea turtle species occur here, including the critically endangered Hawksbill sea turtle, and nest along parts of the coast despite the wars.

The Gulf's waters also support the world's second-largest population of dugongs outside Australia, with an estimated 5,000 to 6,000 individuals. Dugongs are marine mammals that depend almost entirely on seagrass to survive.

Scattered across these waters are coral reefs covering an area the size of Goa. They support several fish and invertebrate communities. Importantly, they can survive extreme conditions, making them a natural laboratory for scientists to understand how coral ecosystems might respond to climate change.

Together, the Gulf is a finely balanced ecological network adapted to extremes.

At its peak, in the 18th to the early 20th centuries, the Gulf's oyster beds supported a thriving economy that supplied nearly 80% of the world's Basra pearls, named after a port in Iraq. This system collapsed when Japanese cultured pearls entered the market in the 1920s.

Then people found oil. By the 1970s, oil had made West Asia one of the world's fastest-growing regions. Today, the Gulf region alone produces nearly a third of the world's oil, with around 800 offshore platforms and more than 25,000 tankers moving in and out every year. Nearly a fifth of the world's oil passes through these waters.

This wealth has driven rapid urbanisation. The number of people has tripled in four decades, with more than 85% of people and economic activity concentrated within 100 km of the coast.

#### **Coastlines remade**

Large-scale land reclamation, dredging, and engineering have transformed the shorelines. In Dubai alone, more than 60% of the natural coastline has been changed.

Projects such as Palm Jumeirah have altered currents and sediment flows, eroding sand in some areas and causing sand to accumulate in others, leaving beaches to be maintained constantly.

Nearly two-thirds of the salt flats have disappeared, mangroves have shrunk, and natural beaches have been replaced with seawalls that eliminate nesting grounds for birds and turtles. Seagrass beds and mudflats have been buried under land reclamation projects, removing important nursery habitats for marine life.

The consequences have also extended offshore. Coral reefs have been buried or smothered by sediments while dredging and construction have disrupted natural flows.

These physical changes have been compounded by industrial pressures such as desalination and pollution.

The Gulf hosts about half of the world's desalination plants, with over 200 facilities producing around 11 million cubic metres of freshwater every day. They produce hot, saline brine, often laced with chemicals and heavy metals, that is discharged into the sea, where it accumulates in the semi-enclosed basin, further raising temperatures and salinity.

Intake systems also remove plankton and larvae, disrupting the base of the food web.



## War and water

Algal blooms fed by sewage deplete oxygen and trigger mass fish deaths, such as those recorded off Kuwait's shores in 1999 and 2011. Chronic nutrient loading also disrupts coral physiology, increases bleaching, and suppresses the growth of seagrass.

Industrial pollutants further accumulate in marine life. The pearl oyster (*Pinctada radiata*), once central to Gulf economies, has borne the brunt of pollution and sedimentation, which have left behind degraded oyster beds.

Leaks, spills, and tanker traffic continue to damage ecosystems. The 1991 Gulf War spill devastated coastlines, mangroves, bird populations, and fisheries while oil fires spread pollutants far afield. The UN Compensation Commission awarded Kuwait \$52.4 billion for a clean-up; decades later, the effort is still underway.

These threats persist even today. The oil infrastructure continues to be a target of drones and missiles, and rising temperatures trigger repeated coral bleaching, pushing already stressed ecosystems to the brink.

The consequences extend far beyond the sea. Across West Asia, the Arabian oryx, populations of the Asiatic cheetah, and the Arabian leopard have fallen sharply due to hunting and other conflicts. The Arabian oryx vanished from the wild by 1972. Then, the Phoenix Zoo in the U.S., Fauna & Flora International in the U.K., and the World Wide Fund for Nature reintroduced it in Oman in 1982, with populations later established across Saudi Arabia, Israel, the UAE, and Jordan. Meanwhile, the Asiatic cheetah survives in Iran in critically low numbers.

Repeated wars have also derailed conservation efforts. The Iranian Revolution in 1979 followed by the Iran-Iraq War in 1980 brought wildlife protection to a near halt, leaving protected areas to decay and wildlife populations to crash.

## A narrowing window

Today, the Gulf is among the worst affected marine regions on the planet. But signs of awareness do exist. The UAE, Saudi Arabia, and Qatar have imposed limits on shrimp trawling. The UAE and Saudi Arabia are also leading mangrove restoration efforts and, together with Kuwait, have established marine protected areas to conserve what remains of these ecosystems.

As marine biologist and New York University (Abu Dhabi) professor John Burt noted in his work on Gulf ecosystems, the region's highly centralised governance — for all its deficiencies — could also facilitate rapid environmental action. What is required is for ecological concerns to be prioritised at the highest levels.

Time is also limited. Ecosystems such as coastal swamps, saltpans, oyster habitats, and the nesting sites of endangered sea turtles are already approaching points of no return.

## 15TH MEETING OF THE CONFERENCE OF THE PARTIES (COP 15) TO THE CONVENTION ON CONSERVATION OF MIGRATORY SPECIES (CMS)

— The 15th meeting of the Conference of the Parties (COP 15) to the Convention on Conservation of Migratory Species (CMS) of Wild Animals was held in Campo Grande, Brazil, from March 23 to March 29, 2026. The theme for this year is “Connecting Nature to sustain life.”



— The CMS is a legally binding global treaty, signed in 1979 under the United Nations Environment Programme, which aims to conserve migratory animals and their habitats across national habitats and across borders.

— Conference of the Parties is the principal decision-making body of the Convention, which meets once every three years and sets the budget and decides priorities for the following three years. At the COP, parties decide on whether to list new species or amend existing listings in the Appendices and consider reports submitted by each Party, the Scientific Council, and the Agreements established under the Convention.

— The CMS has two appendices. It is important to note that a migratory species can be listed in both the appendices.

\* An Appendix I listing is for migratory species that are considered endangered. In the context of CMS, endangered refers to a species or regional population that has been assessed as Extinct in the Wild, Critically Endangered, or Endangered using the IUCN Red List of Threatened Species categories and criteria. If listed on Appendix-I, it would facilitate transboundary conservation efforts of these species.

\* An Appendix II listing is for migratory species that have an unfavourable conservation status and which require international agreements for their conservation and management. A species that has been assessed as Extinct in the Wild, Critically Endangered, Endangered, Vulnerable, or Near Threatened on the IUCN Red List is eligible for consideration.

— India hosted the 13th CMS COP for the first time in 2020 and, with that, also formally assumed the role of CMS Presidency for the next three years. The theme of the COP13 was, “Migratory species connect the planet, and together we welcome them home!”

#### IN SICKNESS AND IN HEALTH, DANCE MAKES IT BETTER

When marimba rhythm starts to play, Parkinson’s patients at a Buenos Aires hospital sway to recover their own lost rhythms. In a ward in the Argentinian capital’s Ramos Mejia Hospital, where time is measured in halting, hesitating movements, the strains of the tango, slowly but certainly, start to loosen muscles stiffened by the neurological disease. Bodies that had ceased to trust themselves start to recapture, a little at a time, an older fluency.

In thus using dance, the Argentinian hospital has joined a growing trend in healthcare that recognises the therapeutic power of rhythmic movement when combined with the standard treatment protocol for diseases such as Alzheimer’s, fibromyalgia and arthritis. Dance synchronised to music constitutes what neuroscientist John Krakauer has described as “pleasure double-play”: While the music stimulates the brain’s “reward centres”, dance activates the sensory and motor circuits. It helps rewire the brain, encouraging it to build new neural pathways or repair damaged ones. In people suffering from illnesses that inhibit movement, dancing in time to music can thus be especially liberating.

This has always been one of the roles that dance has played in human lives. As much as it is an expression of joy and celebration — even aggression, as seen in Maori haka performances — dance has also healed and served as a reminder of resilience. It is, after all, a three-way negotiation between the mind, the body and the laws of physics, with the first always finding ways to defy the limitations imposed by the other two. As diseases impose their own daunting constraints, dancing becomes a way of tapping back into that defiance. Dance becomes a reminder that illness may



reduce the body to a site of failures, but it always remains, first and last, an instrument capable of joy, grace and beauty.

#### IN THE BEGINNING, THERE WAS THE DOG

What would the world be like without music or rivers or the green and tender grass? What would this world be like without dogs?" Mary Oliver writes in *Dog Songs*. Science has now confirmed what the heart has always suspected: That the dog has been by man's side long before the dawn of civilisation. The earliest genetic evidence of the existence of dogs, dating roughly to 15,800 years ago — more than 5,000 years earlier than previously believed — has come to light. Analysis of DNA from remains at sites in Britain, Serbia, Turkey has confirmed that these bones belonged not to wolves, not to liminal creatures hovering between wildness and domestication, but to dogs, already beloved, already companions to hunter-gatherers long before the evolution of agriculture.

The discovery, published in *Nature*, shows dogs were not only common across Europe and West Asia, but they were also genetically linked despite vast distances, suggesting they moved with humans. This indicates that domestication may have begun even earlier. What emerges is a richer picture of coevolution. At some sites, skeletal remains of pets were found buried alongside human remains; elsewhere, evidence suggests that in a world defined by precarity, dogs may have helped humans hunt and guard.

It is tempting to see this bond as sentimental, but, perhaps, it is better understood as formative. To love a dog is to practise, inadvertently, a steadier, kinder way of being — to give and receive love without expectation or grievance. Who has not known, in some dark hour, the soft percussion of paws drawing closer, the comfort of a warm, insistent nose gently nuzzling woes away? Perhaps the hunter-gatherers felt it too — how the steadfast loyalty softened the heart, settled the rough edges into something more patient, more present, and ultimately, more humane.

#### HOPE BUILDS FOR NATIONS TO SAVE BIRD THAT FLIES 30,000 KM

Chasing an endless summer, one shorebird species undertakes a gruelling annual journey from the Arctic to the tip of South America and back -- a feat increasingly fraught with peril.

The Hudsonian godwit (*Limosa haemastica*) is one of the world's most remarkable travellers, but its population has plunged 95% in four decades due to a complex mix of environmental changes across multiple countries.

It is one of 42 species proposed for international protection at a meeting of parties to the UN Convention on the Conservation of Migratory Species (CMS) that starts in Brazil on March 23.

Iconic creatures like the snowy owl -- of *Harry Potter* fame -- striped hyena and hammerhead shark are also on the list deemed in danger of extinction and needing conservation by the countries they pass through.

Migratory birds are facing "rapid and dramatic declines," said Nathan Senner, an ecologist and ornithology professor at the University of Massachusetts Amherst who has studied the Hudsonian godwit for 20 years.

Scientists are still unravelling the mysteries of the shorebird, which can fly up to 11,000 km in one stretch without stopping to eat, drink or sleep.



And it is only part of the 30,000 km that the godwit travels every year from their breeding grounds in the Arctic to Patagonia where they spend the southern summer.

In order to do this "epic flight," they need "really predictable, abundant food resources" at every step of the journey, Senner told *AFP*.

That predictability is crumbling. In the Arctic, shifting spring timing attributed to climate change has created a mismatch between when chicks hatch and the peak availability of insects they feed on.

One of the puzzles Senner is currently working on is why Hudsonian godwits have begun migrating later by six days than they did a decade ago.

Something "has either disrupted the cues that they use to time their migrations or their ability to successfully and rapidly prepare for the migration," he said.

In southern Chile, a boom in salmon and oyster farming has led to a build-up of infrastructure and the presence of people in the intertidal zones where they feed. And in the United States, changes in farming practices are making the shallow water wetlands that the godwits rely on rarer and less predictable — meaning they spend more time looking for a place to stop and feed.

"I think that is emblematic of lots of species, that most species can respond to one kind of change, but not a whole bunch of them all at the same time," said Senner.

"Climate change is taking a heavy toll on species that rely on a 'geological clock' for their survival; many are disappearing," Rodrigo Agostinho, president of Brazil's environmental agency (Ibama) said.

These are some of the issues CMS parties will tackle at their meeting in Brazil's biodiversity-rich Pantanal, one of the world's most important global meetings for wildlife conservation.

These countries are legally obliged to protect species listed as at risk of extinction, conserve and restore their habitats, prevent obstacles to migration and cooperate with other range states.

#### HOW BIOPHARMA SHAKTI CAN TRANSFORM BIOLOGICS WITH NON-ANIMAL MODELS

In 2006, London woke up to a tragedy. Six healthy men involved in a phase I clinical trial of theralizumab, a monoclonal antibody (mAb) designed to treat rheumatoid arthritis, developed multiple organ failure. The antibody triggered an intense immune reaction that the researchers did not observe in rhesus monkeys in preclinical tests because their immune cells responded differently from human immune cells.

The Northwick Park Tragedy, as it was called, became a textbook example of why animals cannot be used as proxies to test human drugs. Similarly, in 2022, the mAb semorinemab failed to work in 457 patients with Alzheimer's disease during phase II trials despite demonstrating effectiveness in a preclinical mouse model.

These mAbs, vaccines, and insulin all belong to a growing class of drugs called biologics — large, complex molecules produced by living cells. Their use is rising worldwide as they treat many chronic diseases.



Recognising their importance, the 2026 Union Budget of India announced the Biopharma SHAKTI strategy to boost domestic production of biologics and their generic counterparts, biosimilars.

However, animal models may not reliably predict the safety and efficacy of biologics. This has prompted a shift towards bioengineered, human-relevant systems such as organoids, organ-on-a-chip, and 3D bioprinting, which are derived from human cells and thus replicate human biology more faithfully.

### Human-relevant models

These models are collected under the term non-animal methodologies (NAMs) and are used worldwide to reduce the use of experiments in animals. For example, last year, the U.K. published a roadmap to phase out animal experiments and promote the adoption of NAMs.

Thanks to the New Drugs and Clinical Trials (Amendment) Rules 2023, India is also promoting the use of NAMs in the development of novel drugs. However, their potential remains untapped in the domain of biologics and biosimilars.

“Biologics are highly specific,” University of Illinois adjunct professor Sarfaraz Niazi said. “They bind to particular receptors in the human body. But those receptors are sometimes missing or function differently in animals, which makes animal testing less predictive.”

One 2024 study in *Cell* reported a breast cancer-on-chip model to study the effectiveness of CAR T-cell therapy, a leading biologic therapy, against solid tumours.

While CAR T-cell therapy has proven effective against blood cancers, solid tumours like breast cancers pose additional challenges like abnormal blood vessel formation and difficulties for T-cells to find and attack the cancerous cells.

The breast cancer-on-chip model recreated this tumour environment in the lab, and the authors of the 2024 study perfused T-cells through it to observe whether they could enter the tumour and mount an immune attack, assessing both treatment benefit and potential safety risks without animals.

These models can also reduce costs and shorten development timelines, making them attractive to pharmaceutical companies. A 2019 analysis in *Drug Discovery Today* estimated that organ-on-chip technologies could lower overall drug development costs by 10-26%. They also found the time required for lead optimisation, when scientists identify a promising drug candidate from a pool of molecules, could drop by 19%.

### Future of biologics

Even if NAMs are promising models, they are not as accessible as animal systems. More than 90 academic labs in India are working on these models. However, the innovation here is not translating into industry use. “Translating NAMs into industry-ready assays requires a clear context of use, robust documentation, and standardised, reproducible protocols, even before qualification. While institutions support entrepreneurship, sustained commercialisation needs stronger, modern policy support,” Kasturi Mahadik, Chief Manager at the Centre for Predictive Human Model Systems (CPHMS), AIC-CCMB, said. (Note: the author works at CPHMS.)

The development of NAMs also requires sustained funding and infrastructure. With an outlay of ₹10,000 crore, Biopharma SHAKTI can provide the necessary backing.



“I think the best use of these funds would be not to develop a single product but to build systems that enable many companies to do so,” Dr. Niazi added.

“The culture of entrepreneurship is also a challenge in India,” Narendra Chirmule, CEO of SymphonyTech Biologics, said. “Although there is an increase in the number of start-ups and MSMEs in biologics (supported by DBT, ICMR, and other grants), exponentially greater investment, as well as support for the development of supply chain materials, is needed to create real impact. Additionally, investors are not well versed in the risks and potentials of the biologics industry”.

#### **Regulatory, market challenges**

Another area supported by Biopharma SHAKTI is biosimilars, generic versions of biologics that are reverse-engineered once the original product goes off patent. However, there are additional financial risks and regulatory adjustments involved, which require greater attention from the government. One challenge is patent evergreening, which allows the exclusive rights of an original biologic to be extended. For example, although the intravenous form of the cancer drug trastuzumab was approved in 2000, the manufacturer later introduced a subcutaneous formulation with a separate patent. Because of this prolonged market exclusivity, cheaper biosimilar versions were not available until 2018.

Before being commercialised, biosimilars also have to receive a nod from the Central Drugs Standard Control Organisation (CDSCO), India’s apex regulatory body. These approvals are based on set guidelines; however, the updated guidelines are still in draft form.

“While India has been updating its biosimilars guidelines to accommodate NAMs, implementation has been slow, and regulatory confidence in independently validated NAM models is still evolving. If accelerated, this would expedite the adoption of NAMs in the biologics and biosimilars field, helping Biopharma SHAKTI achieve its goals,” says Dr. Mahadik.

Therefore, aligning with industry realities and securing regulatory clarity for their use will make biosimilars and biologics manufacturing in India faster, more predictive, and cost-efficient, thus realising the vision set by Biopharma SHAKTI.

**DreamIAS**