

CURRENT AFFAIRS FOR UPSC

29th March to 4th April 2026



DreamIAS



TABLE OF CONTENTS

International.....4

Israel’s death penalty for convicted Palestinians marks a major shift..... 4

Going downhill 5

India joins 60 nations at UK meeting calling for opening Strait of Hormuz 5

A betrayal foretold 6

Europe’s only anti-war Prime Minister 7

Beyond enrichment: mapping Iran’s potential sprint to a nuclear bomb 9

Bahrain cracks down on dissent as Iran war reignites internal unrest10

Pak. as U.S. mediator with Iran recalls Nixon’s China outreach11

As American bombs fall on Iran, South American nations brace for impact.....13

A bully blinks14

Ex-Nepal PM arrested over Gen Z protest killings15

Nation17

Neighbours first.....17

G-7 meet underlines fracture in West, need for India to step up.....17

Cabinet’s advice on grant of remission to convicts is binding on Governor: HC18

On the implications of euthanasia19

What did the Court rule on SCs and religion?.....20

Illogical acts.....22

An impeachment move with no winners23

Form 6 furore in West Bengal: How new voters are included in rolls25

ECI transfer controversy, top court’s clarifications26

Earliest Census data set to be available in 2027; India has fewer villages than during Census 201128

Caste enumeration in Ph-2, says Census Commissioner29

West Bengal’s migrant footprint: Why they leave their homes29

Bhojshala-Kamal Maula mosque dispute: SC says MP HC will decide on objections of Muslim side30

Maharashtra Police ‘walk of shame’ is a shame for the police32

On Maharashtra’s anti-conversion Bill.....32

Spirit of the law34



Uniform Civil Code may leave Muslim women worse off	35
Telangana passes Bill to cut pay of employees who neglect parents	36
Opportunity corridor	37
Lessons unlearned	38
India's online takedown mechanism politically motivated: US in key report.....	39
MHA's AI vision: Predictive policing, dark web monitoring, ending mule accounts	40
NCERT gets deemed varsity status, school body now under UGC framework	41
ISRO invites proposals for observation time on Aditya-L1	42
War lessons for military: Rethinking air defence, countering drones to targets.....	42
<i>INS Aridhaman</i> , nuclear-powered submarine, enters India's naval fleet	44
INS Taragiri.....	45
India's defence exports rose by 62.66% in '25-26 to reach all-time high of Rs 38,424 cr	46
Most parts of India to see more heatwave days: IMD	46
How will the new NDC accelerate climate action?	47
India faces challenge in meeting 2030 maternal mortality goals, shows study	49
Cancer 10th leading cause of death among kids in India: Study	50
Qdenga: a step forward against dengue, but not a silver bullet	51
Great Indian Bustard birth in Gujarat after a decade, with egg from Rajasthan.....	53
Ashoka championed Buddhism; how his grandson helped spread Jainism	54
Sex test for women in elite sports takes toll on right to equality, privacy.....	56
Short News.....	56
Snake Island	56
Black Sea	57
United Nations Mission in the Republic of South Sudan (UNMISS).....	57
Bab el-Mandab.....	57
Denis Manturov	58
Min Aung Hlaing	58
RBI bars banks from non-deliverable derivative (NDD) contracts in the rupee.....	58
Foreign and International Monetary Authorities (FIMA) Repo Facility	59
Aviation Turbine Fuel (ATF) or Jet fuel.....	59
Kavach.....	59
Jawai Leopard Reserve.....	60
Gangetic Softshell Turtles	60
Mihir Bhoj	60
Business & Economics	61
Orderly exit	61
Why India is opposing China-led WTO deal, despite isolation risk.....	61



What is plurilateralism?.....	63
US announces 100% tariff on patented pharma; limited impact on India	64
Fear of the foreign.....	65
CPI with new Base year	66
RBI’s new foreign exchange cap to stem rupee slide. But why are banks worried?	67
Forex reserves	68
RBI weighs e-cheques to modernise payment system.....	69
Fresh IBC amendments: How govt looks to plug gaps in insolvency code	70
Why is India pushing piped gas now?	70
Centre may add battery storage under revamped PM-KUSUM 2.0.....	73
Unexpected surge.....	74
Telangana’s gig workers law: The legislation, and how other states have fared	75
On a wing	75
<i>Life & Science</i>	77
Artemis II: what is at stake for U.S.?	77
In the running.....	79
Falcon 9 reentry pollutes upper atmosphere	80
Earth’s orbits are filling up because governance hasn’t kept pace.....	81
Entanglement: spooky action	83
Sum over the parts	83
What the Meta-YouTube ruling means for social media.....	84
Advocacy groups, childcare experts urge YouTube to protect kids from ‘AI slop’ videos	86
Early screen use stunts vital social growth of children, experts warn	87
Induction cooktop Technology.....	90
Dimethyl Ether (DME).....	91
Tar Balls	92
Germany’s World War-era munitions leave a toxic legacy on Baltic Sea floor	93
Secretive jungle cats need habitats outside protected areas: study	94
Rare whales in the way of Trump’s oil drilling plan	96
Earth’s energy imbalance	97
Is global warming being measured comprehensively? A new study flags gap.....	98
Brazil requisitions services of bank managers to combat deforestation	99



Newfound brain network ‘SCAN’ implicated in Parkinson’s disease 100
exRNA: on a mission 101

INTERNATIONAL

ISRAEL’S DEATH PENALTY FOR CONVICTED PALESTINIANS MARKS A MAJOR SHIFT

Amid the ongoing tensions in West Asia due to the war in Iran, Israel on Monday saw celebrations with the National Security Minister Itamar Ben-Gvir, pouring champagne into the glasses of the members outside the Knesset chamber.

Key Takeaways:

- “Soon we will count them one by one,” he was heard saying in a video shared on social media. The Members of the Knesset, Israel’s parliament, were elated about the passing of what is seen as a deeply polarising law: The “Death Penalty for Terrorists” Bill.
- The highly debated law mandates capital punishment for those convicted of deadly terror attacks against Israeli citizens.
- Legal experts say that this law also highlights a major shift in Israel’s legal landscape. For years, Israel reserved the death penalty solely for extraordinary crimes like genocide.
- Under pressure from right-wing political parties and with strong backing from Prime Minister Benjamin Netanyahu, the new law was finally passed, signalling a tough judicial approach of the state to national security.
- The Knesset displayed the final readings with a 62-48 majority (with one abstention). The key push for the legislation came from the Ben-Gvir-led far-right Otzma Yehudit (Jewish Power) party. His photograph, featuring a golden noose-shaped lapel pin, was widely shared on the internet during the proceedings.

Do You Know:

- The law establishes “death by hanging” as the default sentence for persons convicted of “premeditated murder”, termed a terrorist act — this refers to an act aimed at harming the State of Israel or the rebirth of the Jewish people in their homeland.
- Unlike the previous military regulations that sought a unanimous decision by a three-judge bench, this law allows for a simple majority (2-1) to pronounce the sentence.
- Further, it limits the power of the military commander in the West Bank to commute or pardon these sentences, mandating that the execution be carried out within 90 days of a final ruling.
- While judges technically retain the discretion to opt for life imprisonment under “special circumstances”, the legislative intent clearly frames the death penalty as the standard expectation for such offences.



- The law is not retrospective. This means it will not apply to the thousands of Palestinians currently in Israeli prisons, nor will it apply to the perpetrators of the October 7 attacks, who are being prosecuted under separate, existing legal frameworks.
- In 1948, the newly founded State of Israel inherited British Mandate laws that included capital punishment. However, the Knesset abolished the death penalty for murder in 1954.
- It was retained only for “extraordinary crimes”, including treason, genocide, and crimes against the Jewish people. In the 78-year history of the State, only one person has been executed by the civil judicial system: Nazi official Adolf Eichmann, who was hanged in 1962.

GOING DOWNHILL

President Donald Trump has made several self-contradictory statements ever since the U.S. and Israel attacked Iran on February 28, making it increasingly difficult to take anything that he says about the war seriously. In the early days, he insisted that the conflict would end soon, but it has now entered its second month. On March 21, he threatened to strike Iran’s power plants in 48 hours unless Tehran reopened the Strait of Hormuz. The waterway remains under Iranian control, and Mr. Trump has extended his deadline twice. Despite his repeated claims that U.S. forces destroyed Iran’s military capabilities, Tehran continues to attack U.S. bases in the Persian Gulf and Israel. Last week, U.S. media reported that an Iranian strike at the Prince Sultan Air Base in Saudi Arabia damaged an elite E-3 Sentry AWACS aircraft and several KC-135 aerial refuelling tankers. Mr. Trump now says that his administration is in talks with Iran and a deal is possible. But Iran says that it has got a U.S. proposal to end the war and has made its counter-proposal. The U.S. wants Iran to abandon its nuclear programme, limit its missile programme and reopen the Strait; Tehran demands war reparations, guarantees against future attacks and an end to fighting on “all fronts”. Amid disputed claims about the talks, the U.S. is also sending more combat troops to West Asia in preparation for a possible ground attack.

Mr. Trump appears to have no easy exit. The Strait of Hormuz was open before he launched the war. Ending the conflict now while the waterway remains under Iranian control would seem like a defeat. The U.S. had a robust military footprint in the region. Today, most American bases in the Gulf have been battered. In Iran, Ayatollah Ali Khamenei’s assassination voided his fatwa against the nuclear bomb, and its parliament is considering withdrawing from the Nuclear Non-Proliferation Treaty. Crude prices, under \$80 a barrel before the war, are now hovering around \$114 a barrel. Iran, which was under heavy sanctions, is making more money now because of the wartime sanctions relief. This war is already a disaster for the U.S., and Mr. Trump would worsen it by sending ground troops. The U.S. has not mobilised enough combat troops to launch a large-scale ground invasion. Many argue that the U.S. could try to seize some islands in the Gulf for leverage, but any attack would be extremely risky for both troops and the global economy. Mr. Trump’s escalatory rhetoric, including threats to strike Iran’s civilian infrastructure only underscores his desperation. Instead of digging deeper into the hole he has put himself in, he must start looking for a way out. A ground attack would close even the few remaining off-ramps he has.

INDIA JOINS 60 NATIONS AT UK MEETING CALLING FOR OPENING STRAIT OF HORMUZ

With the shipping disruption in the Strait of Hormuz impacting energy supplies to India, Foreign Secretary Vikram Misri joined a meeting of more than 60 countries, convened Thursday by the UK, on reopening the crucial waterway where he underlined the principles of “freedom of navigation” and “unimpeded transit”.

3RD FLOOR AND 4TH FLOOR SHATABDI TOWER, SAKCHI, JAMSHEDPUR

Telegram: http://t.me/DreamIAS_Jamshedpur



Key Takeaways:

- Misri's remarks found an echo in the Chair's statement following the meeting. The statement issued by the British government said the partners called for the "immediate and unconditional reopening" of the Strait and respect for the "fundamental principles of freedom of navigation and the law of the sea".
- The statement said "Iran's closure of the Strait of Hormuz is a direct threat to global prosperity" and "Iran is trying to hold the global economy hostage" and "must not prevail".
- The Associated Press, reporting from London, said Thursday's meeting is considered a first step, to be followed by "working-level meetings" of officials to hammer out details.
- In a statement, the Ministry of External Affairs said, "Foreign Secretary (Misri) represented India at a meeting convened by the UK Foreign Secretary on the situation in West Asia. More than 60 countries participated in the meeting." The MEA statement said, "Foreign Secretary (Misri) noted the importance of the principles of freedom of navigation and unimpeded transit through international waterways".
- He also conveyed the impact on India's energy security and the toll on Indian seafarers due to the ongoing conflict between US-Israel and Iran.
- A total of 18 Indian-flagged vessels with 485 Indian seafarers continue to remain in the western Persian Gulf region.

Do You Know:

- The Strait of Hormuz is the key channel through which 20 per cent of the global energy supply – and majority of the gas supply from Qatar – passes in large carriers. Qatar, UAE, Kuwait have all been hit by the closure of the Strait, and that has led to a global rise in prices of oil and gas, and impacted the supply of cooking gas in India and other countries.
- According to Section 38 of the United Nations Convention on the Law of the Sea (UNCLOS), all ships (commercial and military) enjoy the right of transit passage. This means they can pass through the strait solely for continuous and expeditious transit between one part of the high seas (or EEZ) and another. Also, such vessels must not be a threat to the bordering nations (UNCLOS Article 39).
- Article 44 of the UNCLOS states that coastal states — Iran and Oman, in this case — "shall not hamper" or suspend this passage.
- Charging a fee is legally interpreted as "hampering" passage because it turns a sovereign right into a conditional permit. Attacking a ship for entering the strait is, obviously, illegal as per international law.
- While Iran is a signatory of the UNCLOS, 1982, it has not ratified the treaty, and therefore, refuses to acknowledge the law.

A BETRAYAL FORETOLD

The U.S. appears poised to break with 77 years of partnership with Western European nations under the security umbrella of NATO, especially after its President Donald Trump has said that he



is “absolutely” considering withdrawing from the alliance, which in his view is a “paper tiger”. This and similar remarks by Mr. Trump have followed White House’s apparent frustration that European and other allies did not expediently send military assets into West Asia to assist the U.S. and Israel in their war campaign against Iran, particularly to secure safe passage for oil tankers through the Strait of Hormuz, currently under Tehran’s control. Mr. Trump has frequently complained about getting less from NATO than Washington was putting into it, saying recently to the media, “... it’s a one-way street”. He has further hinted that NATO may have become an ineffectual global force when he recently observed that Russian President Vladimir Putin also “knows” that NATO lacks teeth to defend its members — a comment that gains additional salience in the context of Moscow’s military aggression against Ukraine and its likely further military adventurism in the Baltic states region.

At the heart of the heightened tension in the U.S.-NATO relationship is Washington’s constant refrain that defence spending by its European partners has fallen short of expectations — even if the immediate trigger for talk of withdrawing from NATO is the Iran war context. A prior question of legality remains unanswered too: under section 1250A of the 2024 National Defense Authorization Act, signed into force by former President Joe Biden, no U.S. President may unilaterally withdraw from NATO; rather they would require either a two-thirds Senate supermajority or an act of Congress towards this end. In the longer arc of history spanning the two Trump terms, a split with NATO, a security alliance, might not be of the same order as the eviscerating institutions of global governance and cooperation, which include the WTO and UN system organisations. But it is part of Mr. Trump’s simultaneous pursuit of American global dominance and splendid isolation. On the one hand it may come as a relief to some that Mr. Trump’s inward turn, pulling the U.S. back from global collaborative engagements could leave a security vacuum that could be opportunistically exploited by middle powers. However, for the world at large, and from a growth and economic stability perspective, the shock of a partnership abandoning its commitments worldwide will likely lead to a recalibration of trust and strategic calculus, ultimately remaking the rules-based international order and the global balance of cooperation across emerging powers. In this new post-Pax Americana world, Europe, more than most, will have to reimagine its security paradigm from first principles.

EUROPE’S ONLY ANTI-WAR PRIME MINISTER

On March 4, Spain’s Prime Minister Pedro Sanchez delivered a televised address to the nation on “recent international events”. Days earlier, when his government had announced it will not allow the U.S. to use their military bases in Spain for strikes on Iran, President Donald Trump had reacted angrily, saying, “We’re going to cut off all trade with Spain.”

As the conservative Opposition leaders accused Mr. Sanchez, leader of the Spanish Socialist Workers’ Party (PSOE), of jeopardising Spain’s relations with the U.S. for petty political gains, he doubled down. In a 10-minute speech that resonated across Europe, Mr. Sanchez characterised the war on Iran as a violation of international law, becoming the only European head of government to publicly reject the war on principle.

Mr. Sanchez, 54, elaborated on his anti-war stance in the form of three ‘no’s. “First, no to the breakdown of international law that protects us all, especially the most vulnerable, civilian population; second, no to assuming that the world can only solve its problems through conflict, through bombs; and finally, no to repeating the mistakes of the past” — a call back to the 2003 Iraq war which had been extremely unpopular in Spain. His government’s position, he said, can be summed up in four words: ‘No a la guerra’, or ‘no to war’. ‘No a la guerra’ quickly became a ‘war



cry' for thousands of anti-war protesters, adorning placards and banners as they organised demonstrations and marches across Spain.

It was clear from the beginning that the U.S./Israel-initiated war on Iran had no upside for Europe. It promised only energy shocks and economic setbacks. But Europe's political establishment, committed to a strategy of placating and flattering Mr. Trump, would not take him on. And then, Mr. Sanchez did.

Many have questioned the motives behind Mr. Sanchez's adversarial position, which he has justified on ethical grounds. They have suggested it is rather driven by self-serving pragmatism. After all, he is on his third term as Prime Minister. He runs a fragile coalition government with the support of smaller left-wing parties and regional allies, including Catalan separatists. He has been losing regional elections. He has not got a budget passed in years. And elections are due in 2027. With barely a year left in his premiership, what better way to shore up his support base, please his allies, and put the pro-war Opposition on the mat than to take on the cartoonishly villainous persona of Trump? It would also distract the public from the corruption allegations against his wife — allegations he claims were cooked up by right-wing operatives to harass him.

There may be merit in this argument. As the first politician in Spain's history to oust a sitting Prime Minister through a no-confidence motion, there is no doubt Mr. Sanchez is a savvy political operator. Yet, if it was such an easy political win to increase your popularity by confronting Mr. Trump, why have not his European counterparts done it? Contrast Sanchez's words — "We will not be complicit in something that is bad for the world and that is also contrary to our values and interests, simply out of fear of reprisals from someone" — with those spoken by the head of Europe's most powerful economy, German Chancellor Friedrich Merz, who said, "Categorising the events [in Iran] under international law will have relatively little effect. Therefore, this is not the time to lecture our partners and allies."

Standing up to Trump and Israel

Pragmatism is a part of the explanation, not all of it. Mr. Sanchez had defied Mr. Trump before as well, when he rejected his diktat that European NATO members should raise their military spending to 5% of national GDP. He secured an exemption for Spain, stating it would spend only 2.1%. He is also the only European head of government to describe Israeli atrocities in Gaza as "genocide". He has barred Spanish ports and air space from being used for ferrying weapons to the Israeli war machine. He rejected Mr. Trump's Gaza reconstruction plans on the grounds that it lacked Palestinian input. Unlike a few other European states that mildly pushed back against Mr. Trump's claims on Greenland but endorsed his actions against Venezuela, Mr. Sanchez's foreign policy positions — be it Greenland, Venezuela, Gaza, Lebanon or Cuba — have been consistent with the principle that international law must be the basis for conflict resolution.

Mr. Sanchez's most startling departure from the rest of Europe, and also the West as whole, is his policy on immigration. While every other social democrat leader in Europe feels compelled to assuage anti-immigrant sentiment by raising barriers to illegal immigration, Mr. Sanchez has been aggressively pro-immigrant. In January, his government rolled out a programme to "regularise" half a million undocumented immigrants by giving them work and residency permits. He explained his rationale in an op-ed in the *New York Times*, titled, "I'm the Prime Minister of Spain. This is why the West Needs Migrants". In an obvious reference to Mr. Trump, he wrote: "Some leaders have chosen to hunt them down and deport them through operations that are both unlawful and cruel. My government has chosen a different way: a fast and simple path to



regularise their immigration status.” He explained the economic benefits of being an “open” rather than closed society, pointing out that mitigating labour shortages through migrants have enabled Spain to become the fastest growing large economy of Europe, increase workers’ purchasing power, and lower poverty and inequality levels.

In rejecting Mr. Trump’s war-related demands, Mr. Sanchez likely calculated there was little risk of economic blowback against Spain since it traded with the U.S. as part of the EU bloc. Regardless of his political motivations, Mr. Sanchez has not only shown up the hypocrisy of other Western leaders but also demonstrated that it is both possible and politically rewarding to stand up to the bully and walk the talk on ‘European’ values.

BEYOND ENRICHMENT: MAPPING IRAN’S POTENTIAL SPRINT TO A NUCLEAR BOMB

Iran is expected to have around 500 kg of uranium enriched to 60%. U-235 is the uranium isotope used in nuclear weapons. Enrichment is the process of increasing the quantity of U-235 in the uranium mass. The rest will be U-238, which is a less efficient fissile material.

A nuclear weapon needs uranium to be enriched to 90%.

The International Atomic Energy Agency (IAEA) has estimated Iran could produce 25 kg for one atom bomb in under 10 days.

Both in June 2025 and in the ongoing war, the U.S. and Israel attacked Natanz and Isfahan — two cities known to host facilities central to Iran’s nuclear programme. However, it is not clear how many centrifuges, the devices that enrich uranium, were destroyed. Details of damages to other equipment have also been muddled.

Once uranium is enriched to 90%, the uranium hexafluoride gas used during enrichment needs to be purified and turned into a metal. This is generally expected to take a few weeks, although more modern technologies are known to complete it in six hours. Iran may already possess them; if it doesn’t, setting them up could take a few months. Other equipment include a cyclone separator, steel containers, and induction furnaces plus a space the size of a “large closet”.

The latter are the words of Theodore Postol, professor emeritus of science, technology, and international security at the Massachusetts Institute of Technology (MIT), as spoken in an interview on YouTube.

Ideally, personnel handle the uranium through secure gloveboxes, and the facility will have high-grade filters and scrubbers to reduce exposure to toxic substances.

The next step is to weaponize the uranium. While the IAEA has estimated this could take up to two years, Prof. Postol argued that if Iran is ready with the necessary equipment and processes, it could weaponize uranium “within weeks”. To this end, again in ideal conditions, skilled personnel will need CNC machine tools, two-axis lathes, vacuum furnaces, and isostatic presses. According to Prof. Postol, these and other requisite operations would be “doable in a tunnel with just a few hundreds of square metres of floor space”.

If Iran has enough centrifuges to enrich 25 kg of uranium from 60% to 90% in two weeks, has mastered weaponisation, and has pre-stashed the equipment, it could have a bomb in 3-5 weeks. But if Iran’s position is like that of a new nuclear power, it could take more than a year.

Nuclear-capable state

3RD FLOOR AND 4TH FLOOR SHATABDI TOWER, SAKCHI, JAMSHEDPUR

Telegram: http://t.me/DreamIAS_Jamshedpur



Importantly, as Prof. Postol said, if Israel strikes Iran with a nuclear weapon, there is no difference between whether Iran responds in a matter of months or days. The point is that it's a nuclear-capable state and, given enough time, could wreak nuclear havoc in return.

Iran could also skip further enrichment and use it directly to build a nuclear warhead. It will just take more fissile material: around 40 kg has been shown to suffice for a weapon with a kilotonne yield.

Prof. Postol also said Iran could deliver the bomb without having to test it first if it uses the gun-type design. This comes with a caveat. This design uses a conventional explosive to blow two subcritical masses of uranium together within milliseconds. Once the mass is supercritical, nuclear fission begins and proceeds at an increasing pace.

However, the design is inefficient. According to the International Panel on Fissile Materials (IPFM), around 50-60 kg of 90% enriched uranium is required to achieve a yield of around 20 kilotonnes (kt). Using the more efficient but more complex implosion-type design, where one 'shell' of subcritical uranium collapses on another, for the same yield will require 15-18 kg.

Finally, Iran has to deliver the bomb. Research has found that figuring out how to miniaturise a bomb to fit on a missile could take years. Iran's Shahab-3 missile can carry a payload of up to 1 tonne and travel more than 1,000 km. However, it's not known if Iran has successfully mated a sufficiently small nuclear warhead with the missile.

Another possibility is for Iran to load the bomb on a ship and move it close to enemy territory.

BAHRAIN CRACKS DOWN ON DISSENT AS IRAN WAR REIGNITES INTERNAL UNREST

The recent developments in Bahrain reveal a familiar yet deeply concerning pattern in West Asian politics—where national security is increasingly invoked to justify the suppression of dissent. Triggered by escalating regional tensions, particularly the ongoing Iran-linked conflict, the Bahraini state has intensified its crackdown on perceived internal threats. However, the line between legitimate security concerns and the curtailment of civil liberties appears to be rapidly eroding.

At the heart of the issue lies the death of Mohamed al-Mousawi, a detainee who allegedly died under torture while in custody. Reports indicate visible signs of abuse, including burns and bruises, prompting outrage among human rights groups and raising serious questions about accountability. This incident is not isolated; rather, it reflects a broader trend where dissent—especially among the Shiite majority—is equated with disloyalty or even espionage.

The Bahraini government, for its part, defends these actions as necessary in a volatile geopolitical environment. With Iranian strikes and drone threats looming large, authorities argue that internal security cannot be compromised. Indeed, arrests of individuals accused of supporting Iran or documenting attacks have been justified on grounds of national defence. Yet, such reasoning risks becoming a convenient pretext for silencing criticism, particularly when vague charges like "spreading false news" or "undermining public order" are employed.

This securitisation of dissent is not unique to Bahrain but part of a wider regional pattern. Across the Gulf, wartime conditions have narrowed civic space, curtailed journalistic freedom, and criminalised online expression. The consequence is a chilling effect on democratic discourse, where even peaceful criticism is fraught with legal peril.



What makes Bahrain's situation particularly delicate is its socio-political composition—a Sunni monarchy ruling over a Shiite-majority population. Historically, this imbalance has fuelled tensions, and heavy-handed measures risk deepening sectarian divides. Instead of fostering stability, repression may inadvertently breed resentment and long-term instability.

Moreover, the economic dimension cannot be ignored. With Bahrain's fiscal outlook already under strain—exacerbated by disruptions in oil exports and regional trade—continued unrest and international criticism could further dent investor confidence. Political stability, after all, is as much about legitimacy as it is about control.

In conclusion, while Bahrain's security concerns are real, the path it has chosen raises fundamental questions about governance and human rights. A state that equates dissent with disloyalty risks undermining its own foundations. The challenge, therefore, is not merely to maintain order but to do so without sacrificing the very freedoms that lend legitimacy to that order.

PAK. AS U.S. MEDIATOR WITH IRAN RECALLS NIXON'S CHINA OUTREACH

Pakistan's emergence as Washington's choice as a mediator in talks with Iran can be explained in a number of ways. Since Operation Sindoor in May 2025, U.S. President Donald Trump has been flattered by Pakistan's description of him as a "peacemaker", and he has reportedly built a personal rapport with Pakistan's Field Marshal General Asim Munir and Pakistani PM Shehbaz Sharif, meeting them several times.

In particular, Mr. Trump hosted General Munir to lunch at the White House in June last year, amidst the last U.S.-Israeli strikes, in an effort reportedly to ensure that Pakistan would not support Iran militarily.

Pakistan's offer of a critical minerals deal to the U.S. and decision to join the Gaza Board of Peace (BoP) have also helped forge the relationship.

For Iran, Pakistan's advantage over many other possible mediators is not only its proximity but also the fact that it does not recognise Israel, and thus is not amenable to concerns or inputs from the Benjamin Netanyahu government. This may suit Mr. Trump as well, who has reportedly conveyed a 15-point proposal to the government in Tehran, which it hopes will lead to a ceasefire.

Cold War precedent

However, Washington's decision to engage Pakistan as a facilitator for talks may also be rooted in history, given Islamabad and a different General's role in facilitating U.S. talks with China 55 years ago, at the height of the Cold War.

At that time, U.S. President Richard Nixon had begun to work on his plan to open up relations with Beijing (the U.S. still formally recognised Taiwan as the Republic of China), but direct Sino-U.S. Ambassadorial talks had floundered. Pakistan was not the first option, as he and his National Security Advisor, Henry Kissinger, considered others.

Mao Zedong, Chairman of the Chinese Communist Party and leader of the People's Republic of China (PRC), turned down the idea of France as he wanted a "non-Western" channel. The Warsaw track fell apart after two rounds of talks between U.S. and Chinese officials, as Mr. Mao protested



U.S. attacks on Cambodia, which were part of a U.S. Army effort to cut off supplies to Vietnamese troops.

While Mr. Nixon's need for partners in Asia, as the Vietnam War drained the U.S., drove him to seek China, Sino-Soviet tensions gave Mr. Mao a reason to engage with Washington.

The U.S. tried Romania, working through President Nicolae Ceausescu to reach out to the Chinese government, but hit an unexpected block. "We went to the Romanians, thinking they were most independent of the East Europeans and they were communists and therefore the Chinese would like that. Turns out the one group the Chinese didn't trust were Communists," Mr. Kissinger told journalist Tom Brokaw decades later, explaining that Beijing feared Romanian officials would divulge details to the Kremlin, which would attempt to sabotage the process.

By then, Mr. Nixon had also established a secret channel to the PRC's leadership through Pakistani President General Agha Mohammad Yahya Khan. "In Nixon's view, Khan was an attractive intermediary since he had good relations with the leaders of the U.S. and the PRC, and he provided a means to circumvent the U.S. Department of State, which Nixon feared might oppose or publicise his initiative," records the U.S. Office of the Historian, in a note about the China opening.

According to one account, the White House sent two identical notes, one through President Yahya Khan and another through President Ceausescu, but it was Pakistan's Ambassador to Washington, Agha Hilaly, who returned with a response first, a whole month before his Romanian counterpart did. In July 1971, Mr. Kissinger travelled to Pakistan, where he feigned an illness and was taken to Nathiagali (near Murree), away from the eyes of the press corps and even his own diplomats in Islamabad. Gen. Khan had arranged for a commercial PIA flight 707 to take him from Rawalpindi to Peking (Beijing) for talks.

Mr. Kissinger, who had been hosted by Indian officials a day before, reportedly used "Delhi belly" as his excuse to ensure a 64-hour getaway that included meeting Chinese Premier Zhou Enlai and others in China for the first time. Planning for Mr. Nixon's visit to China in February 1972, which he referred to as the 'week that changed the world', had begun.

Cost of back-channel diplomacy

The event had deep and lasting impacts on South Asia as well. Mr. Nixon's preoccupation with his back-channel to China and deep-seated rancour against India led him to turn a blind eye as Pakistan's troops unleashed a genocide on Bengalis in East Pakistan. On March 25, 1971, the Pakistan Army launched Operation Searchlight, killing an estimated three million over the next nine months, according to the Bangladesh government.

On April 28, 1971, Mr. Kissinger sent a memo to Mr. Nixon detailing options before the U.S.: (1) support Pakistan militarily; (2) maintain neutrality; (3) help "Yahya achieve a negotiated settlement".

Mr. Nixon's instructions, despite desperate telegrams from the U.S. Embassy in Dhaka about the violence, were clear. "To all hands, don't squeeze Yahya at this time," he wrote, checking option (3).

The crackdown led lakhs of refugees to flee to India, spurring India's support to the MuktiBahini movement led by Sheikh Mujibur Rahman, who had won Pakistani General elections in December 1970 but was imprisoned. The India-Pakistan war followed, where the U.S. even attempted to threaten India by dispatching a naval fleet, but ultimately, Bangladesh was formed by December



that year. India's perspective was shaped by the 20-year Indo-Soviet Treaty of Peace, Friendship and Cooperation signed in August 1971.

Pakistan has played the role several times. External Affairs Minister S. Jaishankar reminded opposition MPs at an all-party meeting last week, when they criticised the government's failure to play a bigger role in the crisis. Since 1981, Pakistan has represented Tehran through its Embassy in Washington's "Iran Interests Section". During the two-decade-long U.S. military intervention in Afghanistan, Pakistan also acted as a mediator with the Taliban. Islamabad was the venue for Quadrilateral talks between Egypt-Pakistan-Turkiye- Saudi Foreign Ministers on Sunday, and could host a U.S. delegation this week. Much depends on whether the Iranian leadership, which accused the U.S. of planning a ground invasion, will join the talks.

AS AMERICAN BOMBS FALL ON IRAN, SOUTH AMERICAN NATIONS BRACE FOR IMPACT

American bombs are tearing apart buildings and lives in Iran, but the shockwaves of those attacks are being felt in parts of Latin America as they trigger old memories and new fears. Even as U.S. President Donald Trump blows hot and cold on Iran, he has begun to speak of Cuba with growing frequency and menace. "I built this great Army. I said, 'You will never need to use it.' But sometimes you have to use it. And Cuba is next, by the way," Mr. Trump told a meeting of investors on March 27 in Miami — a city known for its Cuban community and their opposition towards Havana. "But pretend I didn't say that," added Mr. Trump as he heaped praise on himself for the military campaigns against Iran and Venezuela to a raucous crowd.

The kidnapping of Venezuelan President Nicolas Maduro still hangs over Latin America as countries fear getting sucked into Mr. Trump's so-called war on narco-terrorism. Air strikes are already being conducted on the Ecuador-Colombia border as Ecuadorian military carries out a joint operation with American forces. Called "Operation Total Extermination", the campaign is officially "setting the pace for regional, deterrence-focused operations against cartel infrastructure throughout Latin America", but poor farmers accuse the government of targeting their land and livestock. The country's right-wing President Daniel Noboa has declared an "internal armed conflict" — in line with Mr. Trump's rhetoric.

Before Mr. Trump sent his forces to Venezuela, Washington had branded certain criminal groups as terrorist organisations and named Mr. Maduro as their head. A similar script now appears to be written for other countries. The *New York Times* reported last week that the U.S. is "considering classifying Brazil's two criminal factions — Primeiro Comando da Capital (PCC) and Comando Vermelho (CV) — as terrorist groups".

Generally, groups placed on the American list of terrorist organisations face financial sanctions, but in Venezuela's case, it was used for a military attack. The possibility is causing unease in Brazil. Brazilian Foreign Minister Mauro Vieira recently told his U.S. counterpart, Marco Rubio, that Brasília opposes classifying PCC and CV as terrorist organisations.

In the case of Colombia, the situation is serious. President Gustavo Petro is reportedly being investigated by U.S. prosecutors to find out if he "met with drug traffickers and solicited donations for his 2022 presidential campaign". Mr. Petro has blamed the country's right-wing Opposition for fabricating the story ahead of the presidential elections in May.

As both Colombia and Brazil go to elections this year, their leaders are speaking up against the danger. At last week's Summit of the Community of Latin American and Caribbean States in



Bogotá, President Lula da Silva of Brazil criticised the growing U.S. “colonialist policies towards” Latin America.

As leaders like Mr. Petro and Lula challenge Mr. Trump, his administration appears to be trying to isolate them. On March 7, Mr. Trump hosted the region’s pro-Washington leaders for a conference — called the “Shield of the Americas” — where they discussed how to “enlist and expand” partnerships for joint counter-drug operations in the region. At the meeting in Florida, which didn’t include Brazil, Mexico, Chile, and Colombia, all run by leftist governments, Mr. Trump alleged that “drug cartels are running Mexico”. The meeting’s tone, where only Americans spoke and everybody else listened, has set the alarm bells ringing in several countries. “Maduro’s kidnapping was a warning. The war on Iran is another warning to us to fall in line. The Shield of the Americas meeting is a clear sign that the Americans want to go after the regions’ natural resources, especially rare earths, and curb our relations with China,” says a senior Brazilian official, speaking on condition of anonymity.

Mr. Trump’s close ties with Argentina’s chainsaw-wielding President Javier Milei are well known. Now, the U.S. President appears to be widening his reach. His latest catch is Chile’s new President, José Antonio Kast, who attended the Florida meeting even before being sworn in. Mr. Kast’s inauguration on March 10 offered a glimpse of rising tensions. Lula, who was expected to attend, pulled out at the last minute after Mr. Kast invited Brazil’s far-right politician Flávio Bolsonaro, a likely challenger to the President in October elections.

A BULLY BLINKS

Ever since U.S. President Donald Trump began his second term in office, his administration’s conduct of foreign policy has been that of a schoolyard bully. This is particularly true in 2026, when the U.S. launched attacks on two oil-rich countries, Venezuela and Iran. The first was on the blatantly false pretext of terming President Nicolás Maduro the head of a drug cartel, and the second was at the instance of Israel. As with schoolyard bullies everywhere, the Trump administration recognises no rules and mistakes the absence of violent resistance for proof of its strength. The strangling of Cuba is a case in point. After seizing Venezuela’s energy assets, abducting its President, and cutting off Venezuelan oil supply to Havana, the U.S. threatened countries such as Mexico that sought to step into the breach, and imposed a de facto naval blockade on Cuba, leading to a severe fuel crunch and acute distress for ordinary Cubans. This behaviour, justified by Mr. Trump as an attempt to take over Cuba and remove its decades-long communist government, is part of a strategy so nakedly imperial that it has been termed the “Donroe Doctrine”, a crude play on the original instrument of U.S. hemispheric dominance for over two centuries. Yet, the bully’s power is often brittle and holds only until someone calls the bluff. When Russia, Cuba’s ally since the Soviet era, dispatched a tanker, *Anatoly Kolodkin*, as humanitarian aid to fuel-starved Cuba, it also tested the will of the Trump administration to interdict a ship owned by another nuclear power. The tanker reached without incident.

The U.S., it turns out, did not push back and the bluff now stands exposed, even if by a country that has itself displayed similar behaviour in neighbouring Ukraine. Cuba’s fuel crisis has not ended and the threat of American attacks still hangs over the socialist government led by President Miguel Díaz-Canel. But Russia’s timely help reveals that the rest of the world need not simply endure the Trump era as this administration goes about breaking every accepted tenet of the international order. For all its flaws as a one-party state, Cuba has been an avowed member of the Non-Aligned Movement, has shown solidarity with the Global South by deploying well-trained doctors for medical programmes across poor countries, and has contributed materially to anti-



colonial struggles for decades. It is time other countries repaid the Cubans by showing the will to break the American blockade and continue sovereign trade and commerce with Cuba, asserting their right to do so. After all, the international order holds only when its constituents accept that might does not always make right.

EX-NEPAL PM ARRESTED OVER GEN Z PROTEST KILLINGS

A new government installed in Nepal after earlier this month's seismic electoral shift has stoked political tensions with the arrest of former Prime Minister K.P. Sharma Oli.

The police on Saturday arrested Mr. Oli and former Home Minister Ramesh Lekhak on charges of culpable homicide during September last year's Gen Z protests.

The arrests came a day after the new government led by Balendra Shah of the Rastriya Swatantra Party (RSP) was sworn in, six months after the protests in which 76 people lost their lives, including 19 in police firing on September 8.

According to police, the arrests were made to implement the recommendations of a probe commission that investigated the incidents during the Gen Z uprising. Mr. Oli was taken into custody from his residence in Gundu, while Mr. Lekhak was arrested in Suryabinayak, Bhaktapur, a district adjoining Kathmandu.

The Gen Z protests overthrew the Oli government, in which Mr. Lekhak, a Nepali Congress leader, served as Home Minister.

Tensions ran high in various parts of Kathmandu on Saturday as members of Mr. Oli's Communist Party of Nepal (Unified Marxist-Leninist) took to the streets. Protesters demanding Mr. Oli's release clashed with police in Maitighar, the designated protest site in the capital.

Police stepped up security in and around Singha Durbar, the government complex.

Commission findings

The commission formed to investigate the incidents of September 8 and 9 recommended that Mr. Oli and Mr. Lekhak be prosecuted for negligent killings, stating that they failed to prevent lethal police firing during the protests.

The first Cabinet meeting of the new government, formed after the RSP's landslide victory in the March 5 election, on Friday decided to implement the commission's report. Home Minister Sudhan Gurung then moved quickly, holding a meeting with the chiefs of Nepal Police and the Armed Police Force late Friday night to implement the commission's recommendations.

On Saturday, after police arrested the two leaders, Mr. Gurung posted on Facebook: "Aayo Gorkhali," which translates to "Gorkhali has arrived" but carries the connotation of courage and bravery.

The move to arrest the two leaders, however, has raised questions, with critics saying it reeks of vendetta politics.



The commission also recommended prosecution of Chandra Kuber Khapung, who was chief of Nepal Police at the time of the protests, along with other high-ranking officials. However, they have not been arrested.



DreamIAS



NATION

NEIGHBOURS FIRST

In an exchange of early messages, Prime Minister Narendra Modi and Nepal's newly-sworn-in Prime Minister Balendra "Balen" Shah said they look forward to "working closely" to take forward bilateral ties. Delhi and Kathmandu are prepared to begin a new chapter in relations, united by familial bonds, a shared culture, open borders, and intertwined politics. Land-locked Nepal has depended on trade and transit through India, with India's plans for an energy grid in the region an important channel for Nepal's hydropower exports and revenues. Like many former leaders of Nepal, Mr. Shah studied in India. Familiarity aside, it would be a mistake to assume that his ascension will chart a well-worn and predictable course between the two countries. At 35, he is Nepal's first Madhesi leader, and upturns the old dominance of the Brahmin-Chettri Pahadi elite. New Delhi must have a greater understanding of the priorities of this new Gen-Z movement that brought down the K.P. Sharma Oli government in 2025. This is a new leadership that has not inherited the old foreign policy understandings of the past generations of leaders that came through the panchayati movement, Congress and Communist parties, or the Maoist movement that overthrew the monarchy. In that sense, the Shah government's foreign policy, including its ties with China and the U.S., as well as the overarching relationship with India, is yet to be formalised. In the past decade, India has increased its development assistance to Nepal, but it also strained its ties over the constitution, the long blockade on border trade, and territorial issues. As Mayor of Kathmandu, Mr. Shah was known for his overt nationalism, and rejection of the "hegemony" of India and other powers, while his use of a map of "Greater Nepal" had been read with some concern in New Delhi.

The Modi government should tread lightly, and positively, as the Shah government finds its feet, but offer India's full support in dealing with Nepal's immediate challenges. Among those are the impacts of the war in West Asia where Nepal will need help with fuel and fertilizer imports. Approximately 14% of Nepal's population (about 3.5 million) work abroad, and the country is dependent on remittances and tourism revenues. New Delhi could also reconsider requests from previous Nepali governments to allow overflight for new Nepali airports, reduce restrictions on purchasing Nepali power produced with third-country assistance and to update the bilateral friendship treaty. Differences delayed New Delhi's invitation in 2024 to Mr. Oli, upon his election — he eventually visited Beijing first. It is time to quickly invite Mr. Shah to visit Delhi at the earliest, and for Delhi and Kathmandu to move forward, putting "Neighbours first" in South Asia.

G-7 MEET UNDERLINES FRACTURE IN WEST, NEED FOR INDIA TO STEP UP

When the foreign ministers of the Group of Seven met at a mediaeval monastery outside Paris last week, their agenda was inevitably dominated by the US-Israeli war against Iran and its cascading global economic consequences. The ministers called for an immediate halt to attacks on civilians and civilian infrastructure, emphasised the protection of diplomatic missions and foreign nationals, and warned that continued escalation could destabilise the wider Middle East. They called for coordinated humanitarian assistance for affected populations and underlined the need for a return to diplomatic channels. The G7 ministers also warned that disruption to shipping through the waterways posed a serious threat to the global economy, given the large share of the world's oil and gas that transits it, and indicated readiness to coordinate maritime security efforts to ensure freedom of navigation.



The barebones statement did little to conceal, however, the deepening divisions between Washington and its NATO partners. Trump has been relentless in publicly castigating European allies for their reluctance to back the US against Iran. The Europeans, for their part, feel angry at being excluded from decisions over a war at their doorstep; some have declared it illegal and want no part in it. Secretary of State Marco Rubio reminded European partners that Washington has borne the major share of Ukraine's defence over four years — a war, he pointedly noted, not of America's making. He also sought to reassure them that the war against Iran would be over within weeks and that the US would prevail. For five decades, the G7 has been the sheet anchor of Western leadership of the international order. It has weathered political storms before. This time, though, the differences look deep and structural rather than superficial and tactical.

External Affairs Minister S Jaishankar attended the Paris meeting as a special invitee, alongside counterparts from Brazil, Saudi Arabia, South Korea, and Ukraine. He used the occasion to engage collectively and bilaterally with G7 ministers and to underscore the importance of coordinated action in ending the war. Jaishankar and his French counterpart agreed to maintain close coordination on securing the Strait of Hormuz. The two ministers also confirmed Prime Minister Narendra Modi's participation in the G7 Summit in June, underlining India's contribution to the group's work on macroeconomic imbalances and international partnerships. India's presence at the Paris meeting was a demonstration of the country's growing global salience — and a reminder of the greater responsibilities that come with it. As the fracture within the West deepens, India's contribution to stabilising the Gulf situation becomes not merely needed but also urgent.

CABINET'S ADVICE ON GRANT OF REMISSION TO CONVICTS IS BINDING ON GOVERNOR: HC

A Full Bench of the Madras High Court on Thursday held that the Governor, whether he/she likes it or not, is bound by the advice of the Council of Ministers while exercising powers under Article 161 of the Constitution in matters relating to remission and premature release of convicts.

The Bench comprising Justices A.D. Jagadish Chandira, G.K. Ilanthiraiyan and Sunder Mohan ruled that the Governor, under no circumstance, could exercise any discretion whatsoever to take a different view from the one taken by the Council of Ministers.

The Bench was answering a reference made to it by a Division Bench.

The Division Bench consisting of Justices M.S. Ramesh (since retired) and V. Lakshminarayanan had referred the matter to the larger Bench, for an authoritative pronouncement, in September 2025 after coming across two conflicting decisions delivered in 2024 by two other Division Benches of the High Court on the issue.

While answering the reference, the Full Bench agreed with State Public Prosecutor Hasan Mohamed Jinnah and advocate M. Radhakrishnan that the issue had been settled by a Constitution Bench of the Supreme Court in as early as 1980.

The Constitution Bench in 1980 decision comprised Justices V.R. Krishna Iyer, Y.V. Chandrachud, P.N. Bhagwati, Syed Murtaza Fazalali and A.D. Koshal.

Mr. Jinnah also said, the 1980 judgment delivered in Maru Ramu's case was followed by the Supreme Court in 2022 too while ordering the release of former Prime Minister Rajiv Gandhi assassination case convict A.G. Perarivalan. He also relied upon Supreme Court's 1974 verdict in Shamsher Singh versus State of Punjab.



‘Consistent stance’

After concurring with his submission, the Full Bench said, the top court had consistently held the Governor could not exercise any discretion while exercising powers under Article 161 of the Constitution and it had been reflected even in its recent decision on the Governor’s power to withhold Bills passed by the State legislature. One of the Division Benches of the High Court had rightly followed the law, while the other Bench had wrongly relied upon the Supreme Court’s judgment in the 2003 M.P. Special Police Establishment case which was related to the Governor’s statutory function of granting sanction to prosecute Ministers in corruption cases.

The Full Bench further pointed out the Supreme Court had delivered its verdict in A.G. Perarivalan’s case only after considering the M.P. Special Police Establishment case.

“Therefore, it is clear that the ruling [by one of the Division Benches of the High Court] in Murugan alias Thirumalai Murugan is *per incuriam* (a judgement passed without taking the correct position of law into consideration) to the limited extent that it holds that the ruling in M.P. Special Police Establishment permits the Governor to act in his own discretion in exercise of powers under Article 161 of the Constitution,” the Bench led by Justice Chandira concluded.

ON THE IMPLICATIONS OF EUTHANASIA

The recent judgment by the Supreme Court in the *Harish Rana v. Union of India* (2026) case has raised questions regarding the ethical, legal, and social implications (ELSI) of passive euthanasia. Euthanasia is related to the right to die with dignity, which was recognised by the Supreme Court in *Common Cause v. Union of India* (2018). The court held that the right to die with dignity is inseparable from the right to receive quality palliative care. Hence, in the Harish Rana case, the court, for the first time, allowed the withdrawal of the applicant’s Clinically Assisted Nutrition and Hydration (CANH).

The court had held in the Common Cause case that the right to die with dignity is an integral part of the right to life under Article 21 of the Constitution. Allowing passive euthanasia and recognising the Advance Medical Directives (living wills) for terminally ill patients to refuse life-prolonging treatment was laid down in *Aruna Shanbaug v. Union of India* (2011). Following this, in *Common Cause v. Union of India* (2023), the court streamlined the process of passive euthanasia, making its implementation easier.

In the new guidelines, the court changed the requirement for two medical boards, a hospital board and a district-level board, refining it to make the process smoother, and mandatory immediate judicial oversight in every case was removed. While addressing advance directives (living wills), the court emphasised patient autonomy, allowing individuals to refuse life-sustaining treatment and die naturally with dignity.

Considering the above, a few questions arise regarding euthanasia and its relevance in India. First, whether granting passive euthanasia is ethical. It is logically perceived that birth and death are natural processes; hence, nature should decide when a person dies and how the body responds to illness. In this context, any interference with the rules of nature may be considered unethical.

However, it is also a fact that life is the period between birth and death, and it is spent in a society where dignity is of utmost importance. Life, therefore, can be viewed as more sociological than biological. Both the birth and the death should be dignified. In this context, the right to die with dignity assumes greater significance.



Ethical aspects of euthanasia

The ethical principles enshrined in this act of granting passive euthanasia further clarify this issue. The primary and probably the most significant aspect is the principle of autonomy, which grants the patient — or, in cases of terminal illness, their next of kin — the right to make decisions. Second is the principle of beneficence, which is related to the patient's benefit, which the doctors treating the patient should consider. Third is the principle of non-maleficence, which suggests that the decision to allow passive euthanasia should not cause harm. Finally, the principle of justice must be protected to ensure that no injustice is done to the patient.

Apart from these principles, we may look at the decision from the viewpoint of the Theory of Double Effect proposed by St. Thomas Aquinas. According to this theory, every action creates two effects, and the one that is less harmful or beneficial should be considered ethical. In the case of passive euthanasia, the action — withdrawal of life support, or CANH in the Harish Rana case — leads to two effects. First, the death of the patient, and second, relief from suffering. If the decision is taken without malice, the act can be considered ethical as the patient was relieved of his pain.

Social implications

The right to die with dignity or passive euthanasia in India reflects a progressive but cautious approach, mainly due to a transition in societal values. This transition is from rigid moral traditions to a more compassionate, rights-based approach. While it promotes dignity, autonomy, and relief from suffering, it also raises concerns about misuse, ethical conflicts, and social inequality. There has also been a transition from the social attitude of protecting life at any cost to the quality of life being more important than its length.

Another major implication is economic in nature, as long-term life-support treatment without any hope of recovery would put the family under severe economic stress, especially in the middle- and lower-income groups. In this context, the right to die with dignity appears to be justified.

Further, social implications may include its possible misuse and especially vulnerable people like the elderly, disabled and poor may face coercion. This may create a situation where the decision may be driven by financial constraints, social neglect, and family pressure. Hence, critics may point out that it would amount to disguised abandonment.

The court has taken utmost care while delivering the judgment and stated that “passive euthanasia is an obsolete and incorrect term, and should not be used either in common usage or legal writing and discussions”. It unnecessarily confuses the legal position on the issue, as the debate cannot be neatly divided into ‘acts’ and ‘omissions’. Further, the court also held that the patient is not abandoned by withdrawing or withholding medical treatment. Palliative and end-of-life care must continue for these patients.

WHAT DID THE COURT RULE ON SCS AND RELIGION?

The story so far:

The Supreme Court ruled on March 24 in *Chinthada Anand v. State of Andhra Pradesh* that a pastor from the Madiga community in Andhra Pradesh could not claim to be a member of a Scheduled Caste (SC) as he had converted to Christianity. The Court upheld the the decision of the Andhra Pradesh High Court, which had reached the same conclusion in an alleged atrocity matter.



Can a person of Christian faith be SC?

A Bench of Justices Prashant Kumar Mishra and Manmohan laid down that the Constitution (Scheduled Castes) Order, 1950, clearly defines the parameters under which SCs are to be identified. A clause in it says, “No person who professes a religion different from the Hindu, the Sikh or the Buddhist religion shall be deemed to be a member of a Scheduled Caste.”

The judgement holds that this bar on religion imposed by the Constitution (SC) Order was “absolute” without exceptions. The Court has said that the term “profess” in the clause in the Order “connotes to publicly declare or practice a religion.” In its March 24 ruling, the Court said that the appellant “professes Christianity” — a religion not mentioned in the Order. “Conversion to any religion not specified in Clause 3 results in immediate and complete loss of Scheduled Caste status from the moment of conversion regardless of birth,” the Court said. It added, “Christianity, by its very theological foundation, does not recognise or incorporate the institution of caste.” The Court held that the moment one ceases to be a member of a SC by virtue of converting faith, “the loss of such status carries with it the automatic...termination of all eligibility for statutory benefits, protections, reservations, preferences and entitlements that are predicated upon or flow from such membership”, including those under the Scheduled Castes and Scheduled Tribes (Prevention of Atrocities) Act, 1989.

Even though Chinthada Anand argued that he had a caste certificate showing that he belonged to the Madiga community, designated an SC community, the Court said, “Mere production of a certificate cannot override the admitted fact that the appellant is a practising Christian”. It also said that there was no evidence to suggest that Mr. Anand had reconverted to Hinduism or that the community had accepted him back.

Is this question new? What is the Centre’s position on this?

The Court has addressed the question of SC status for people from Dalit communities who have converted to Islam or Christianity. A petition to accord SC status for Dalit Christians and Muslims was filed in 2004 and continues to be heard today.

Over the years, petitioners have argued that several communities had historically belonged to SC groups but had, over time, converted to faiths such as Christianity and Islam. Even though their choice of faith may have been led by the wish to be freed of their caste, caste had entered their chosen faiths as well. They have cited reports commissioned by the government from the first decade of the 21st century supporting their position that Dalit Muslims and Christians should be accorded SC status.

The Union government has relied on the Constitution (SC) Order, 1950, and argued that Dalit Muslims and Christians should continue to be excluded because of the “foreign origin” of these faiths as opposed to Hinduism, Sikhism, and Buddhism.

The petitioners argued that the Constitution (SC) Order, 1950, had been amended first to include Sikhism in the 1950s and then Buddhism in 1990, in response to a large number of people in parts of the country turning to Buddhism, heeding Dr. B.R. Ambedkar’s call.

In October 2022, the Centre constituted a Commission of Inquiry headed by former Chief Justice of India K.G. Balakrishnan to examine the issue of whether SC status can be accorded to SC converts to Islam and Christianity. The Commission’s deadline is set for April this year.



What about people who have “reconverted” to Hinduism, Sikhism, or Buddhism?

Even as the the Centre’s Commission of Inquiry is yet to submit its report, pending which the Supreme Court Bench hearing these matters will proceed, the Bench of Justices Mishra and Manmohan, on March 24, laid down the threshold for what counts as “reconversion”, what is the burden of proof for this, and who this burden must fall upon.

The Court noted that if a person of SC origin claimed that they had “reconverted” to any of the faiths mentioned in the Constitution (SC) Order, 1950, three specific conditions must be met “cumulatively and conclusively”. First, the person must be able to prove that they “originally belonged” to a SC group. Second, there must be “credible and unimpeachable evidence of bona fide reconversion to the original religion”. Third, there must be evidence of “acceptance and assimilation by members of the original caste and concerned community.” The Court said that the “burden of proving reconversion lies entirely on the claimant, to be proven through unimpeachable evidence.”

In elaborating on the proof of “reconversion”, the Supreme Court said that this should be accompanied by “complete and unequivocal renunciation of the religion to which conversion had taken place, total dissociation therefrom, and actual adoption and observance of the customs, usages, practices, rituals, and religious obligations of the original caste.”

What about Scheduled Tribes (STs)?

The Court said that for STs, there was no such religion-based exclusion prescribed in the Constitution (Scheduled Tribes) Order, 1950. “The determination of Scheduled Tribe status, therefore, cannot rest on conversion alone, but must turn on whether the claimant continues to possess and is recognised for the essential attributes of tribal identity, including customary practices, social organisation, community life, and acceptance by the concerned tribal community,” the Court held.

The Court said that if a person’s conversion or later actions completely break their connection with the tribal way of life and they lose recognition within the community, their ST status is weakened. Conversely, if the tribal attributes remain or are re-established and accepted by the community, the claim cannot be automatically rejected. Such cases must be evaluated on a fact-specific basis by the competent authority in accordance with constitutional principles.

Hundreds of ST communities profess Christianity, Islam, and indigenous faiths, such as Sarnaism. And while there are States such as Nagaland, where entire ST communities may have, over time, converted to Islam or Christianity, there are also States such as Chhattisgarh and Jharkhand, where there has been a rise in Adivasi movements insisting that ST communities that had converted to faiths other than indigenous ones be disentitled from getting statutory benefits meant for STs.

ILLOGICAL ACTS

The gherao of seven judicial officers in Malda on April 1 by a mob marks a disturbing escalation in what has been a fevered election season in West Bengal. The Supreme Court of India condemned it as a “calculated” attempt to disrupt the adjudication process. The ECI has referred the probe to the National Investigation Agency, and the incident has become a flashpoint in the confrontation between the Trinamool Congress (TMC)-led State government and the ECI over the Special Intensive Revision exercise and its aftermath. Election-related violence has largely become

3RD FLOOR AND 4TH FLOOR SHATABDI TOWER, SAKCHI, JAMSHEDPUR



a thing of the past in most States, but not in West Bengal, where violence is endemic during any election. This is partly due to the intensity of political contestation. During the era of Left Front dominance, elections were battlegrounds for “area dominance” between the Left and the TMC. The State pioneered panchayati institutions in India, which led to significant politicisation at even the local level. With a largely rural economy and little industrialisation, electoral contests were also about who controlled the power to distribute patronage. Today, the Left Front is a shell of its former self and the polity is dominated by contests between the TMC and the BJP; the TMC using what some academics term a “franchise model of politics,” leveraging the charisma of Chief Minister Mamata Banerjee to foster a patronage system with local satraps, and the BJP seeking to import a similar model but with a Hindutva emphasis. This new political contest has brought its own forms of violence.

This year, the contest has been complicated by the SIR. The process has dragged on even after the revised roll, with 7.04 crore electors, down from 7.6 crore in 2024, was released. Close to 60 lakh electors are still being parsed for “logical discrepancies” with roughly 40% of adjudicated cases resulting in rejections. Judicial officers, working under the Court’s oversight, have been clearing this backlog — an exercise that would never have reached this stage had the ECI not relied on flawed software to filter enumeration requests. The Court has allowed appellate tribunals for persons whose names have been rejected, but there is uncertainty over whether these will conclude before polling. With tempers running high over what appears to be significant disenfranchisement — electors and political leaders in affected areas allege that the deletions have disproportionately hit the minority Muslim community — the resort to illegal methods of protest such as the Malda gherao has vitiated the election process. A more electorate-friendly approach to the SIR by the ECI, along with effective interventions by the Court, could have avoided much of the public anger. West Bengal’s political leaders must tamp down the rhetoric, not inflame it.

AN IMPEACHMENT MOVE WITH NO WINNERS

A win-win situation benefits all stakeholders even if a compromise is reached in search of a workable alternative. It could even be a way in which the winning side deludes the losing side to perceive its loss as a necessary price it paid for survival.

The impeachment motion of the Opposition parties against the Chief Election Commissioner (CEC) is one such example. It is a motion destined not to carry. Yet its prime movers may not see the loss as a defeat. But can the CEC see their loss as his victory?

The move of the Opposition parties is doubtlessly dramatic. However, the question that needs to be pondered by the well-wishers of the Election Commission of India (ECI) is what prompted them to don the gloves for a fight with no chance of victory. Perhaps, sometimes one fights not to win but to wound the opponent. And the troubling part is that political parties treat the CEC as an opponent.

Steadfast defiance

The move to impeach the CEC is a first in the history of an institution that is supposed to be a vanguard of Indian electoral democracy. “India built many institutions after attaining freedom and adopting a Republican constitution...If anyone were to conduct an opinion poll on which of these institutions rendered the best service to Indian democracy with the highest degree of integrity, I



have no doubt that the ECI will be our people's first choice," said Atal Bihari Vajpayee, the then Prime Minister at the ECI's golden jubilee celebrations on January 17, 2001.

And now, 25 years later, 193 parliamentarians of the Opposition have submitted notices for an impeachment motion against the CEC citing charges of "partisan and discriminatory conduct", "obstruction of investigation into electoral fraud" and disenfranchisement via the Special Intensive Revision (SIR) of electoral rolls. The notice is as unprecedented as the manner in which the revision of electoral rolls has been undertaken despite serious challenge by most political parties, except the ruling dispensation. Such an alignment of thinking disconcerted the Opposition, which sharpened their attack against the CEC. The repeated press conferences by the Leader of the Opposition (LOP) exposing discrepancies in the electoral rolls of States where elections had been held, further eroded trust in the body.

While the aggressive style and severity of the LOP's attack on the poll body, questioning its integrity was surprising, what was more surprising was the poll body's obduracy in not providing a credible response to the doubts raised on its functioning and impartiality. As the attacks became more and more bitter, communication channels between the poll body and the opposition political parties seemed to choke.

The nation had seldom seen such a relentless campaign against a CEC even as the Supreme Court heard endless petitions against his decisions. As the petitions failed to yield any substantive relief, frustration mounted and so did the CEC's apparent indifference. The CEC persisted with the SIR despite the fortnight-long Vote Adhikar Yatra just before the Bihar State elections.

Not that there was no dialogue. The one between the poll body and the Trinamool Congress caused more rancour culminating in the theatrical presence of Mamata Banerjee in the Supreme Court. Never before had a Chief Minister appeared in Court arguing against the ECI's unfair decisions. The dharnas against the SIR in West Bengal or officials dying in the course of conducting the SIR failed to deter the CEC or change his avowed commitment to "purify" the electoral rolls.

The ECI invented the "logical discrepancy" tool that pitted electors against the AI used to detect discrepancies. West Bengal saw 58,20,899 electors deleted at the draft stage and 60,06,675 "under adjudication" in the final list. But the ECI went on to announce elections in the State, where the fate of nearly 10% electors remained undetermined. It employed micro-observers for finalising the revised rolls, something never done in the past. The SC also took the extraordinary step of appointing over 500 judicial officers to decide the fate of these electors in a short span.

It is unusual for a constitutional body mandated with electoral rolls preparation to involve another constitutional body in discharging its routine functions by disregarding the elector's voting right, which it was created to protect. The exclusion of even a single eligible voter due to the way the SIR has been conducted would legitimise the criticism of this arbitrary and aggressive exercise.

A loss for the common man

However, does all of this justify the impeachment move? The answer depends on which side of the divide one stands. The crores of voters who figure in the final electoral roll might not protest, treating the tension and trauma during the revision process as part of the routine struggle that helpless citizens go through to secure their rights. The voice of those excluded doesn't count in the elections in any case.



Eventually, the valid concern of protecting the right to vote turns into the lament of losers who are left with no choice but to resort to the ultimate constitutional weapon against the CEC.

Meanwhile, the ECI has sounded the poll bugle asking players to contest against each other rather than against the referee. It is now in full control. The successful completion of the poll process will justify all its decisions. Victors will exult; losers will find reasons to complain.

What the nation would be left with will be a poll body in which the Opposition, representing more than half the voting population, has expressed no confidence.

FORM 6 FUDORE IN WEST BENGAL: HOW NEW VOTERS ARE INCLUDED IN ROLLS

With just days to go till the electoral rolls for the April 23 and April 29 polls in West Bengal are to be frozen, the All-Trinamool Congress has alleged a last-minute attempt by the BJP to have electors from Bihar and Uttar Pradesh enrolled onto the state's rolls.

Key Takeaways:

- TMC general secretary Abhishek Banerjee has accused the BJP of trying to change the demography of the state by submitting thousands of Form 6s, which are the Election Commission's form for enrolment of new electors.
- In a series of press conferences and statements over the past week, the TMC has alleged that thousands of Form 6s have been submitted by the BJP at West Bengal Chief Electoral Officer Manoj Agarwal's office in Kolkata.
- As per the EC's rules, Booth Level Agents of political parties can submit upto 50 forms for inclusion and deletion every day. However, any elector enrolled in a particular constituency can file a Form 7 seeking deletion of someone they suspect to be ineligible.

Do You Know:

- A Form 6 is the Election Commission's form for application for new voters, as per provisions of the Registration of Electors Rules, 1960. The form is addressed to the Electoral Registration Officer of the Assembly constituency or the ERO of the Parliamentary constituency in case of Union Territories without an Assembly.
- By law, it is the ERO, who is a local official designated for the job by the ECI in consultation with the state government, who has to maintain the electoral roll, accept additions, process deletions and carry out hearings in case of objections.
- Along with the form, the applicant has to provide a self-attested copy of a document proving date of birth, including birth certificate, Aadhaar card, PAN card, driving license, Class X or Class XII certificate or Indian passport.
- While Article 326 of the Constitution says only Indian citizens above the age of 18 can be registered to vote, the Form 6 does not seek proof of citizenship. It does, however, include a self-declaration that the applicant is a citizen and if found otherwise, can face a fine or imprisonment upto one year or both.



ECI TRANSFER CONTROVERSY, TOP COURT'S CLARIFICATIONS

Recently, the Election Commission of India (ECI) transferred a number of senior officers in some of the election-bound States as soon as their election schedules were announced. In the election schedule for 2026, polls are to be held in four States, namely, Assam, Kerala, Tamil Nadu and West Bengal, and the Union Territory of Puducherry.

In the State of West Bengal, the Chief Secretary and Director General of Police — the head of State administration and the head of the police force — were among several officials transferred overnight without the consent or prior knowledge of the State government. The ECI claimed that such a step had been taken to ensure free and fair elections in those States. The States concerned, particularly West Bengal, were virtually stunned by the ferocity of these transfer orders, which have almost paralysed the administration. The crucial question here is whether it is within the powers of the ECI to transfer, in this manner, the heads of State administration in the name of ensuring free and fair elections. Are we then to conclude that, without transferring a handful of top officers, the ECI cannot conduct free and fair elections? There are many such disturbing questions that arise from these transfers.

It is difficult to find any statute under which such transfers can be made by the ECI. Of course, it always points to Article 324 of the Constitution (Superintendence, direction and control of elections to be vested in an Election Commission) to justify such actions. It is true that the Article confers unspecified powers on the ECI to conduct free and fair elections.

Article 324 and scope of powers

The Supreme Court of India had, in *Mohinder Singh Gill and Anr. vs The Chief Election Commissioner, New Delhi and Ors.* (1978), and in a host of other cases, held that Article 324 is a plenary provision which is in fact a reservoir of powers that can be used by the ECI whenever the need arises to ensure free and fair elections. But in all such cases the Court has added a rider that such powers can be used only where the field is unoccupied by a statute. In other words, the ECI cannot draw any such power from Article 324 where a law made by Parliament or a State legislature holds the field in which case it has to obey that law.

In *Mohinder Singh Gill*, the Court made the following significant observations which have clearly laid out the scope of the powers under this Article as well as its limitations. It said, "The Constitution, contemplates a free and fair election and vests comprehensive responsibilities of superintendence, direction and control of the conduct of elections in the Election Commission. This responsibility may cover powers, duties and functions of many sorts, administrative or other, depending on the circumstances".

However, there is a caveat. The Court added, "Two limitations at least are laid on its plenary character in the exercise thereof. Firstly, when Parliament or any State Legislature has made valid law, relating to or in connection with elections, the Commission shall act in conformity with, not in violation of such provisions but where such law is silent Art. 324 is a reservoir of power to, act for the avowed purpose of, not divorced from pushing forward a free and fair election with expedition. Secondly, the Commission shall be responsible to the rule of law, act bona fide and be amenable to the norms of natural justice in so far as conformance to such canons can reasonably and realistically be required of it as fairplay-in-action in a most important area of the constitutional order, viz., elections."



The issue of statutory backing

The officers belonging to the all India services are governed by the All India Services Act and the rules made thereunder. The transfer of an officer is the exclusive prerogative of the government. The all India service officers who are serving a State government are under the administrative control of the State government which has exclusive authority to transfer them at any time.

Under the Seventh Schedule of the Constitution, the State Public Services are under the exclusive control of the State governments. It is the exclusive function of the governments — the State and the Union — to deal with all aspects of the services of the officers serving under these governments.

The crucial question that has arisen in the context of the transfer of senior officials of the State governments under the orders of the ECI is whether this action has any statutory backing. The duty of the ECI is to conduct elections in a free and fair manner. Of course, it has all the powers to perform this task in accordance with the mandate of the Constitution and statute.

Article 324(6) requires the State government or the Union government to make available to the ECI on demand the staff required by it to conduct elections. The Representation of the People Act of 1950 as well as the Representation of the People Act, 1951 contain elaborate provisions that deal with the duties and powers of the ECI. Nowhere do any of these Acts contain any provision that empowers the ECI to transfer the head of a state administration or the head of the state police force, while keeping the State government in the dark, on the ground that their continuance in their posts will hamper the conduct of free and fair elections.

It is true that the Court has held that Article 324 has plenary powers to ensure free and fair election. But the Court has never dealt with the transfer of the seniormost officers in States by the ECI, taking the State governments by surprise and resulting in a paralysis of the administration, in the exercise of its plenary powers under Article 324. Apart from that, the Court has itself clarified that if the field is occupied by the law, the ECI needs to obey that law. It may be argued that the law mentioned by the Court must be related to, or in connection with, the election. It may also be argued that the All India Services Act or its rules are not laws relating to elections, but that is a very narrow, technical view.

The crucial point is that the ECI is not empowered to bypass a law made by Parliament dealing with the transfers and postings of all India Service officers, and cannot transfer such officers at will over the heads of the State government. The underlying assumption in such transfers is that those officers will not allow the ECI to conduct elections in a free and fair manner.

On 'unchecked power'

The ECI has a proud history of conducting elections in the country since 1951-52. It has always depended on State government officials to accomplish this task as the ECI does not have any machinery of its own to undertake such a gigantic exercise. The ECI, by branding them as men lacking integrity and removing them from their posts on the eve of an election is a new trend that will most certainly demoralise civil servants in the country. It is also not clear under what procedure the ECI has reached the conclusion that these officers are biased and unsuitable for conducting free and fair elections. Article 324 does not give unfettered powers to the ECI. The Court, which granted plenary powers to the ECI, had also said this in *Mohinder Singh Gill* — “No one is an imperium in imperio in our constitutional order. It is reasonable to hold that the



Commissioner cannot defy the law armed by Article 324. Likewise, his functions are subject to the norms of fairness and he cannot act arbitrarily. Unchecked power is alien to our system.”

These words from the highest court of the land are loud and clear enough.

EARLIEST CENSUS DATA SET TO BE AVAILABLE IN 2027; INDIA HAS FEWER VILLAGES THAN DURING CENSUS 2011

As Census 2027 is being conducted digitally, most of the data gathered during the process will be published in 2027, Mritunjay Kumar Narayan, Registrar- General and Census Commissioner of India, said on Monday.

He said the caste enumeration methodology for the second phase was yet to be finalised, and officials were studying multiple suggestions received on the subject.

Data shared by Census officials show that compared with Census 2011, there has been a decrease in the number of villages by over 1,000 and an increase in urban settlements — statutory towns and Census towns.

From Census 2011, the number of States and Union Territories increased by one to 36; districts from 640 to 784, an increase of 144; sub-districts by 1,102 — from 5,990 to 7,092; statutory towns by 1,087 — from 4,041 to 5,128; and census towns by 688 — from 3,892 to 4,580. The number of villages declined by 1,030, from 6,40,932 in 2011 to 6,39,902, according to the administrative unit data presented by the Commissioner.

Mr. Narayan said West Bengal was the only State that had not notified the Census process, and while deliberations were on with the State government, it had time till September 30 to carry out the exercise.

This would be the first digital Census, first to enumerate caste and first to allow a self-enumeration option to respondents. The data keyed in during self-enumeration would be verified by enumerators during door-to-door visit and the option was only available for residents living in India, he said, allaying concerns of data manipulation.

“As per the Census Act 1948, the Census data are confidential and the respondents are to answer to the best of their knowledge. Only aggregate data is released, an individual’s data cannot be shared with States or even the judiciary and do not also come under the purview of the Right to Information Act (RTI). Census data cannot be used to provide reservation benefits to any individual,” Mr. Narayan said, while addressing a press conference before the first phase of Census kicks off on April 1 in certain States. He said Census data were beyond the “scope of investigation.”

16 languages

Mr. Narayan said the self-enumeration portal, available in 16 languages, would be live from April 1 to 15 for residents of the Andaman and Nicobar Islands, Goa, Karnataka, Sikkim, Odisha, Lakshadweep, Mizoram and the NDMC and Delhi Cantonment areas. Self-enumeration option would be available 15 days before the first phase of Census — the House Listing Operations (HLO) begins. The window for the first phase is April 1-September 30 for all States. The second phase — population enumeration where each individual’s information in the household, such as religion, caste etc. would be asked, would be conducted in February 2027.

“People can use mobile phones and laptop to fill in the data,” he said.

3RD FLOOR AND 4TH FLOOR SHATABDI TOWER, SAKCHI, JAMSHEDPUR



CASTE ENUMERATION IN PH-2, SAYS CENSUS COMMISSIONER

With the first phase of Census 2027 set to launch this Wednesday, April 1, the Centre said that caste enumeration will be conducted during the second phase of the exercise, known as Population Enumeration (PE).

Key Takeaways:

- Addressing a press conference, Registrar General and Census Commissioner Mritunjay Kumar Narayan detailed the two-pronged structure of the national exercise.

—Phase 1 includes House listing and Housing Census (HLO), focusing on housing conditions, available amenities and household assets.

—The second phase provides data on demographic, socio-cultural and economic parameters, including migration and fertility.

- The Census exercise will kick off April 1 with self-enumeration, allowing people to digitally submit information during the 15-day window preceding the first phase, Narayan said. This will be followed by the house-to-house houselisting operation by designated enumerators beginning April 16. The first phase is scheduled to be completed within a 30-day window between April and September 2026.

- Census 2027 will cover 28 states and 8 Union Territories, 784 districts, 5,127 statutory towns, 4,580 census towns and 6,39,902 villages.

- The Census is a Union subject and is listed at serial number 69 in the Seventh Schedule of the Constitution.

- On June 16 last year, the Centre issued a notification declaring its intent to conduct the Census 2027.

Do You Know:

- The Census has been conducted in India since 1872. Census 2027 will be the 16th census overall and the eighth since Independence. The first phase of Census 2027, the Houselisting and Housing Census, is scheduled to begin on April 1 this year. The second phase of the Census, population enumeration, will take place in February 2027.

- The Registrar General of India (RGI), which comes under the Ministry of Home Affairs, issued a notification last week regarding the details to be collected during the house-listing process. Details on 33 items, including buildings and assets possessed by households, will be collected. The Centre has approved a budget of Rs 11,718.24 crore for Census 2027.

- The RGI has developed a Census Management and Monitoring System, a web-based platform to manage and monitor various Census 2027 activities. This will allow deployment of enumerators and supervisors and real-time monitoring of data collection, a source said.

WEST BENGAL'S MIGRANT FOOTPRINT: WHY THEY LEAVE THEIR HOMES

In West Bengal, migrants are a major voting bloc but are among the most vulnerable groups as the adjudication phase continues following the Special Intensive Revision (SIR) of electoral rolls.



Key Takeaways:

- The 2011 Census showed that while Bengal saw substantial migration outside the state, it wasn't among the top states in this regard. Uttar Pradesh (1.23 crore), Bihar (74.53 lakh) and Rajasthan (37.57 lakh) had the largest out-migrant populations, with Bengal ranking seventh highest at 24.06 lakh, of whom 14.52 lakh were women and 9.53 lakh men.
- If 5.43 crore total inter-state migrants accounted for 4.5% of the country's population in 2011, Bengal's out-migrants counted for 2.63% of its population then.
- Neighbouring Jharkhand had the largest population of migrants from Bengal at 4.95 lakh, followed by Maharashtra at 3.1 lakh, Uttar Pradesh at 2.34 lakh, Bihar at 2.28 lakh, and Delhi at 1.82 lakh. In fact, across India, two of the top 50 most popular migration corridors originated from Bengal and ended in Jharkhand and Maharashtra.

Do You Know:

- The Census data showed a jump of 45% in the number of migrants from Bengal compared to the 2001 Census. In number terms, 7.18 lakh more people left Bengal in this period compared to a decade earlier.
- In 2011, marriage was the biggest reason for migration from Bengal, with a total of 9.35 lakh or 38.88% of the migrants citing this reason. Women comprised almost all of this number, at 9.14 lakh, compared to just over 20,000 for men. Employment and moving with households were the next biggest reasons for migration, at 5.85 lakh or 24.34% and 4.74 lakh or 19.72% of the migrants, respectively.
- The 2016-17 Economic Survey of India used a Cohort-based Migration Metric (CMM) to gauge net migration as the percentage change in population between the 10-19 year-old cohort in an initial Census period and the 20-29 year-old cohort in the same area a decade later. "It is likely to capture labour migration, as other bilateral movements for reasons such as marriage are netted out in the equation," the report says.
- The 2016-17 Economic Survey data showed that UP and Bihar had the highest such net migration, with numbers increasing between 1991-2001 and 2001-11. While Bengal saw about 30,000 people aged 20-29 years leave the state in 1991-2001, this figure rose to 2.35 lakh in 2001-11, the Survey noted.

BHOJSHALA-KAMAL MAULA MOSQUE DISPUTE: SC SAYS MP HC WILL DECIDE ON OBJECTIONS OF MUSLIM SIDE

THE SUPREME Court on Wednesday left it to the Madhya Pradesh High Court to decide the request of the Muslim petitioners in the dispute over the Bhojshala Temple-Kamal Maula Mosque complex in Dhar district for copies of the site videography conducted by the Archaeological Survey of India (ASI).

Key Takeaways:

- It also said that the High Court will decide on all the objections, including those arising from the videography.



- A three-judge bench presided by Chief Justice of India Surya Kant refused to interfere with the January 22 order of the High Court, noting that it had not rejected the request for colour photographs and video of the survey but had only said that it would be considered at the time of the final hearing of the case.
- Appearing for the Maulana Kamaluddin Welfare Society, Senior Advocate Salman Khurshid told the bench, also comprising Justices Joymalya Bagchi and Vipul M Pancholi, “All we want is videography and colour pictures to be handed over so that we can make our objections.”
- Khurshid said the High Court can consider the matter thereafter, and there is no need for any haste in hearing it.
- CJI Kant said the High Court had not rejected the request but had only said that the application seeking the video copy and colour pictures would be taken up with the main case.

Do You Know:

- At the centre of Dhar city, over 250 km away from Bhopal, is the tomb of Kamal al-Din, a Chishti saint and follower of Farid-al Din Ganj-i-Shakar and Nizam al-Din Auliya. His tomb was built adjacent to a spacious hypostyle mosque “built primarily of reused temple parts”. This led to right-wing groups arguing that the complex is a temple dedicated to the Goddess Vagdevi (Saraswati).
- The Hindu Front for Justice (HFJ), argued that the mosque was constructed during the reign of Alauddin Khilji between the 13th and 14th centuries, after “destroying and dismantling ancient structures of previously constructed Hindu temples”.
- According to a 2012 research paper by Michael Willis, published in the Royal Asiatic Society, the Bhojshala or ‘Hall of Bhoja’ is a term used to describe the centre for Sanskrit studies associated with King Bhoja, the most celebrated ruler of the Paramara dynasty.
- The mosque has been referred to in the writings of English author John Malcolm in 1822 and William Kincaid in 1844. While they documented popular legends associated with Raja Bhoj, they never identified the Bhojshala.
- Willis pointed out that Alois Anton Fuhrer, a German Indologist who worked for the ASI, travelled to Central India in 1893 and recorded the mosque complex with the term “Bhoja’s school”. However, he was dismissed from his position in the ASI after an investigation uncovered an enormous degree of bad scholarship.
- In 1902, a small archaeological department office was established in Dhar by the British government and Superintendent of State Education, K K Lele, was made its in-charge. At the time, the British were investing in research to modernise the Indian government, and in his enquiry, Lele found “two serpentine inscriptions giving the alphabet and grammatical rules of the Sanskrit language.”
- Art historian O C Ganguly, and then Director-General of the ASI, discovered an “inscribed sculpture” in the British Museum and announced that it was “Bhoja’s Saraswati from Dhar”. Over time, many others would back this claim.



MAHARASHTRA POLICE 'WALK OF SHAME' IS A SHAME FOR THE POLICE

A trend that began in Nashik and is spreading to other jurisdictions in Maharashtra flags the dangers of the police chasing virality by undermining institutional propriety and publicity at the cost of due process. Over the past six months, Nashik Police have been putting out videos that are circulated on their official digital handles as well as through local news and social media groups, in which the accused are paraded before cameras, with the slogan “Nashik zilla kaydyacha balekilla (Nashik district, a fortress of law and order)”. Similar videos have emerged in parts of Thane as well. This unseemly “walk of shame” violates the rule of law in letter and spirit, and paints the police force not as a guardian of due process but as the bully with the biggest stick.

According to Maharashtra Inspector General (law and order) Manoj Kumar Sharma, there have been no instructions to create such videos. However, the parading of criminals, the performance of apparently forced acts and words of contrition, are not isolated aberrant actions by individual officers. Nashik Commissioner Sandeep Karnik, who claims the (dubious) credit for starting the trend, says that the “fortress of law and order” videos began after some young people produced a video last year calling Nashik a “fortress of crime”. Since then, several alleged offenders, including those linked to local political figures, have been publicly shamed. At times, the alleged criminals appear to be limping in the videos.

The Nashik Police’s actions have raised valid concerns over due process. Policing must not be an algorithmically driven popularity contest. The scheme of crime and punishment in a constitutional democracy does not rely on “shame”, or on officers of the law turning into vigilantes. In fact, the Nashik Police, through its viral videos, is actually admitting to a fundamental failure in discharging its duties and undermining trust in the broader justice system. It is for the judiciary to pronounce guilt or innocence and apportion punishment according to the law. “Walks of shame” are reminiscent more of regressive khap panchayats than a modern police force. The officers responsible for the open travesty of due process in Nashik and beyond must be held to account. The message must go out from the highest quarters that films like Dabangg and Singham are works of fiction, not police instruction manuals.

ON MAHARASHTRA’S ANTI-CONVERSION BILL

The story so far:

The Maharashtra Freedom of Religion Bill, 2026, was passed by both Houses of the Maharashtra Legislature a few days ago. The Bill has been opposed by several civil society organisations, which have expressed apprehensions about the State encroaching on the personal liberty of its citizens. They claim that the Bill violates the fundamental rights enshrined in the Constitution.

What is the Maharashtra Freedom of Religion Bill?

The Maharashtra Freedom of Religion Bill, 2026, has been defined as “a Bill to provide for protection of right to freedom of religion and prohibition of unlawful conversion from one religion to another, and for matters connected therewith or incidental thereto.” It aims to prohibit conversions carried out through allurement, misrepresentation, force, undue influence, coercion, or any other fraudulent means.

It lays down an elaborate procedure for conversion, including a declaration of intent with a 60-day prior notice. A post-conversion declaration is also required.



What are the key provisions?

Under the proposed Act, it is mandatory for the police officer to register a complaint even if the relatives of the converted person approach them. The complainant may be the converted person, or their parents, siblings, or any other person related by blood, marriage, or adoption.

Any marriage solemnised solely for unlawful conversion shall be declared null and void by the court, on a petition filed by either party. Any child born out of such a marriage or relationship belongs to the religion of the mother before such a marriage or relationship. The child will have succession rights to the property of both parents as per the prevailing laws. Maintenance will have to be given, and custody will remain with the mother unless decided otherwise by a court.

What punishment is proposed under the Bill?

Punishments for violation include imprisonment of up to 10 years and a fine of up to ₹7 lakh. Offences under the Bill will be cognisable and non-bailable.

The offence of unlawful conversion is punishable with up to seven years' imprisonment and a fine of ₹1 lakh. If the person converted is a minor, a woman, a person of unsound mind, or belongs to the Scheduled Castes or the Scheduled Tribes, the punishment increases to seven years' imprisonment and a fine of ₹5 lakh.

Mass conversions will attract similar penalties. Repeat offenders may face imprisonment of up to 10 years and a fine of ₹7 lakh. Institutions found guilty of forced conversions may face cancellation of registration and withdrawal of government aid or grants. Office-bearers may also face imprisonment of up to seven years and a fine of ₹5 lakh. Victims will be entitled to rehabilitation, maintenance, and custody of children.

What are the concerns raised?

Concerns have been raised on several grounds, including the lack of empirical evidence to justify such legislation, the social implications of the 60-day prior notice requirement, the curtailment of the individual's right to freedom of religion, and administrative overreach into personal matters.

Last year, the State government appointed a seven-member special committee under the Director General of Police to study legal issues related to religious conversion. Its report has not yet been made public, though the government has said that the committee recommended enacting a special law.

Opposition leaders have termed the Bill 'regressive' and alleged that it targets a particular community.

Since offences under the Bill are non-bailable, civil rights activists have expressed concerns that it may target interfaith marriages and minority religious practices. They also fear the intervention of families and vigilante groups in pressuring consenting adult couples.

"In any case, this places State surveillance over deeply personal decisions related to faith and marriage," a civil rights activist said.

Bureaucrats have also raised administrative concerns. "There is no established certification system for religions right now. We will have to develop a system. This is an administrative concern. We will have to look into the models that other States have developed. An entire gamut



of administrative mechanisms will have to be created,” a senior IAS officer said, adding that the revenue authorities will now come into the picture for matters of marriage and personal laws, which were managed by the civil courts so far. “Personal law is increasingly becoming a matter of administrative authorities. This creates a complication for marriages out of free will, too,” an IAS officer said.

How has the State government addressed these apprehensions?

The government has said that the right to freedom of religion is not absolute. It has also been said that the cases of forcible religious conversions have been increasing in the State, and that the government does not currently have effective laws to tackle the law and order issues arising out of them.

“These instances are causing disturbance to public order in the State and are affecting social harmony,” Chief Minister Devendra Fadnavis has said.

SPIRIT OF THE LAW

Legislation passed by Maharashtra and Chhattisgarh recently on religious conversions misleadingly claims to protect freedom of religion but effectively does the opposite. Laws made by both States restrict the individual freedom of faith through requirements of prior permission from the state, public disclosure, and by shifting the burden of proof to the accused. These States now join at least 10 others in having detailed legal restrictions on an individual’s right to practise and profess any religion of their choice. It is true that the state has a duty to protect all citizens from force and fraud. But when that principle is applied to test whether a person’s religious faith is an outcome of criminal force or fraud, it is a leap into chaotic darkness even with the best of intentions. What goes on in a person’s mind, such as matters of faith, is not accessible to another person in its entirety, and any attempt to police faith will invariably lead to high-handedness. A batch of petitions challenging these laws has been pending before the Supreme Court of India, and the final status of the new laws in Maharashtra and Chhattisgarh will also be linked to the final determination of the constitutionality of such laws by the Court. Meanwhile, the laws will disturb social order and harmony, achieving the exact opposite of what they purportedly set out to do.

The provisions are harsh, intrusive and authoritarian. Under the Maharashtra law, a person intending to convert must give 60 days’ notice and seek prior permission from a designated authority. Conversion must be registered within 25 days, or it will be treated as null and void. The authority will publish the notice locally, including at the relevant gram panchayat, inviting objections within 30 days. If objections are received, the authority may direct police to conduct an inquiry. The Chhattisgarh legislation also has similar provisions, but additionally exempts reconversion to one’s ancestral religion from its purview. Even community religious gatherings can attract provisions of the Chhattisgarh law, which replaces a 1968 law made by undivided Madhya Pradesh. Anti-conversion laws are premised on a lack of agency of the individual and driven by an ideological framework that links nationality to faith. In a less passionate and more reasonable framing, a person’s change of faith is no different from their decision to change their passport, political affiliation, or place of residence — all of which are legal. In any case, religions have no basis in verifiable scientific facts, and propagation of religion, a constitutionally guaranteed right, can easily be misrepresented as fraud. By seeking to resolve a problem that does not exist, the Bharatiya Janata Party is serving only its own narrow political interests.



UNIFORM CIVIL CODE MAY LEAVE MUSLIM WOMEN WORSE OFF

Faizan Mustafa Writes- The Uniform Civil Code (UCC) has once again moved to the centre of public debate — driven by the Supreme Court (SC) rather than the government, even though Article 44 places it within the domain of policy.

- In the latest petition, the Court was asked to strike down the Muslim Shariat (Application) Act, 1937, which permits the application of Muslim Personal Law (MPL) in matters of succession and inheritance.
- A three-judge bench, led by Chief Justice Surya Kant, made pertinent observations while advocating a UCC to remove discriminatory provisions in MPL. The Chief Justice observed that “in our over-anxiety for reforms, we may end up depriving them, and they might end up getting less than what they are already getting”.
- The Jamiat Ulama-i-Hind has now challenged the newly enacted Gujarat UCC on the changes it has made to inheritance law. Merely providing equal shares in succession law to sons and daughters does not ensure equality in inheritance if the same law grants absolute testamentary powers — allowing a person to will away their entire property to anyone he chooses.
- In contrast, under the Shariat Act, as per MPL rules, a Muslim person cannot will away more than one-third of their property, nor can they make a will in favour of an heir without the consent of other heirs. Any UCC that does not restrict testamentary powers may do more harm than good to Muslim women in matters of inheritance.
- The Shariat Act was enacted because many Muslim communities, in the name of custom, were denying daughters any share in their father’s property.
- Section 2 of the Shariat Act states that MPL shall apply in certain personal matters where the parties are Muslims. MPL is often mistakenly regarded as purely customary law. In reality, it is partly codified through statutes such as the 1937 Act, enacted by a secular legislature. Judicial decisions also form part of MPL. Therefore, it is a jurist-made law based on scholarly opinions.

Do You Know:

Faizan Mustafa Writes-

- The Shariat Act does not extend to agricultural property, denying Muslim women rights over landed assets. Several state land laws are even more regressive. While MPL grants daughters at least half the share of sons, some land laws have completely excluded daughters when sons exist.
- The UP Revenue Code, 2006, introduced some improvement by granting shares to unmarried daughters. However, distinguishing between married and unmarried daughters is arbitrary and violates Article 14 of the Constitution. In certain respects, MPL is more women-friendly than even the Hindu Code or the Uttarakhand UCC. The CJI’s observations require serious consideration by those who view the UCC as a panacea for Muslim women
- Under MPL, the consent of the bride is essential for marriage, and there is no equivalence of kanyadaan. She can insist on the inclusion of any condition in the nikahnama or marriage contract. Unlike dowry, mehar (dower) is paid by the husband and is a necessary condition for a valid marriage. Marriage in Islam is treated as a civil contract rather than a sacrament, and the Shariat Act recognises several forms of divorce that a woman can initiate.

3RD FLOOR AND 4TH FLOOR SHATABDI TOWER, SAKCHI, JAMSHEDPUR



TELANGANA PASSES BILL TO CUT PAY OF EMPLOYEES WHO NEGLECT PARENTS

The Telangana government on Sunday passed the Telangana Employees Accountability and Monitoring of Parental Support Bill, 2026, in the Legislative Assembly. The Bill proposes to bring about salary deductions for private and public sector employees deemed to be neglecting and failing to support their parents.

Key Takeaways:

- Speaking during the debate over the Bill, Chief Minister A Revanth Reddy said, “The rights of parents should be protected by goodwill. But the Bill makes sure that the law is on the parents’ side when they are neglected.”
- The Bill was introduced because “dependent parents... are an inseparable part of the Indian family system and it is therefore felt expedient to provide for an enforceable morality through certain norms among those employees, who do neglect their parents, and to ensure every employee leads as a role model in society”.
- It also says that “despite the Maintenance and Welfare of Parents and Senior Citizens Act, 2007... there remains a need for a more focused and enforceable mechanism to ensure accountability of employed children, particularly those drawing salaries from government and private sectors, towards the maintenance and well-being of their dependent parents”.

Do You Know:

- Under the Bill, senior citizens who are neglected by their children can file an application before the District Collector. The Collector will be the designated authority for adjudicating cases. The complainants should state their reasons for seeking apportionment, and are expected to divulge details of their income from all sources.
- After the complaint is submitted before the District Collector, the officer should dispose of the petition within 60 days of receipt, as per the Bill. The parents and the employee will have to be heard during this time. An order specifying the amount to be deducted will be issued after this hearing. The deducted amount will be directly credited to the parents’ bank account. The Bill extends support not only to biological parents but also to step-parents.
- It proposes the formation of a Senior Citizen Commission to handle appeals against the Collector’s orders in such cases or delays in disposal. The commission will be headed by a chief commissioner who will be a retired high court judge. The commission will also include two members with experience in administration, government or the social sector. The commission will have quasi-judicial powers, including the authority to conduct inquiries, summon witnesses and impose penalties.
- The law will also be applicable to MLAs and MPs, as well as nominated members and elected representatives of local bodies.
- The Bill allows salary deductions of up to 15% or Rs 10,000, whichever is lower.



OPPORTUNITY CORRIDOR

India is now Naxal-free, Home Minister Amit Shah declared in the Lok Sabha on March 30, a day ahead of a deadline he had set for himself for ending Left Wing Extremism (LWE). His assertion follows three years of intensive paramilitary operations, during which 4,839 Maoists surrendered, 2,218 were arrested, and 706 were neutralised in encounters. Mr. Shah had made tackling LWE a central piece of his internal security policy, and of his political legacy. Not surprisingly, he made it a point to contrast the measures and milestones under his watch with those of the UPA regime on this front. Former Prime Minister Manmohan Singh had flagged LWE as the biggest internal security challenge before the country and his government launched Operation Green Hunt in 2009-10, an expansive paramilitary offensive that faced stiff criticism from his allies. The belt of Maoist influence, at its peak, touched over 180 districts covering tribal, forest, and mineral-rich areas in Bihar, Jharkhand, Chhattisgarh, Odisha, Andhra Pradesh and Maharashtra. The approach to tackling LWE then was more hesitant and measured, mindful of the human and institutional costs.

Mr. Shah launched an uncompromising militarist strategy which he reiterated in his speech. He said the government had a dual approach — dialogue and rehabilitation for those who surrendered arms, and no mercy for those who refused. His sweeping strategy steamrolled human rights activists and academics who were branded ‘urban Naxals’. Police measures went far beyond even the harsh provisions of India’s anti-terrorism laws, strangling freedoms and distorting judicial processes. The paramilitary operations have, in all probability, decapitated the military capabilities of the insurgents, opening the possibility of state presence in some of the least governed regions of the country. Mr. Shah said that a campaign to establish a school in every village and provide Aadhaar and ration cards to residents in some of the worst-affected areas has already begun. He is right that Maoists are ideologically opposed to parliamentary democracy, which is a position delinked from development or its absence. Nevertheless, inclusive development is imperative for a stable, peaceful society. The defeat of LWE extremism should not accelerate crony capitalist extraction of natural resources and further alienate tribal rights. Instead, it must lead to the genuine expansion of the rights of tribals, their substantive participation in parliamentary democracy, and accountability in resource extraction. Mr. Shah deserves credit for leading the operational success in curtailing LWE. He must now lead a politics of reconciliation and heal the wounds of the battle.

Do You Know:

- Left Wing Extremism (LWE)-related incidents and resultant deaths have fallen by over four-fifths since 2010. The number of LWE-affected districts has shrunk from nearly 200 in the early 2000s to just 38 by the end of 2025. A February 2026 review by the Ministry of Home Affairs shows that only seven districts—five in Chhattisgarh, one in Jharkhand and one in Odisha—are now categorised as “LWE Affected”, with just three of them (Bijapur, Narayanpur and Sukma) marked “Most Affected”.
- Surrounding them is a ring of 31 “Legacy Thrust” districts, where violence has ebbed but state support is being maintained to consolidate gains.
- Former CRPF Director General K Durga Prasad, who helped craft Greyhounds’s counter-insurgency model, argues that Maoists were “never a match to the State”. “The movement started failing a long time ago. The Maoists have admitted this in their own documents. In 2024, the CPI (Maoist) leadership told cadres to either move to secure zones or surrender.”



- Emerging from the Naxalbari uprising of 1967, early Naxalite groups framed India as a “semi-feudal, semi-colonial” society in which only armed peasant war could deliver land and dignity. Over decades, they spread across what became known as the “Red Corridor”—from forests of Andhra and Telangana to tribal belts of Bihar, Jharkhand, Chhattisgarh and Odisha—by embedding themselves among landless peasants, Dalits and Adivasis for whom the formal state was distant, predatory or violently absent.
- As Maoist influence recedes, the danger is not a sudden return of a disciplined guerrilla army but the emergence of new forms of alienation or criminality in areas where insurgent structures once mediated power and resources. The MHA’s decision to designate 31 “Legacy Thrust” districts—from Gadchiroli and Balaghat to Koraput and Bhadradi Kothagudem—reflects recognition that declaring victory is not enough. These areas will continue to receive focused security and development support to prevent relapse.

LESSONS UNLEARNED

Another stampede and another probe. India seems to have learned little about crowd management despite a series of stampedes in recent months. At the Sheetla Mata temple in Bihar’s Nalanda district on Tuesday, nine persons died, eight of them women, and a dozen were injured. On the occasion of the last Monday of the month of Chaitra, more than 10,000 people came to the temple, which typically sees only a few hundred devotees. Police say they had no forewarning of a large gathering, though many view their absence as a consequence of the bandobust requirements for the Nalanda University convocation, which was attended by the President of India that day. Priests had allegedly taken money for the special darshan and allowed the bribe givers through the exit, which became clogged. The entrance was practically blocked as people tried to get in. One death from a likely fall was enough to trigger panic. What happened was clearly avoidable, as are all stampedes that routinely occur in India. For instance, too many people trying to enter a packed stadium is a well-studied disaster scenario and lessons have been learned from it in many countries. However, the RCB victory celebration in Bengaluru, in June 2025, led to an avoidable buildup of the crowd in the city, which was then led into the already full stadium.

Crowd science and crowd management are well-defined subjects in academia in the developed world. While crowd science deals largely with planned gatherings, there is a whole body of literature on unplanned, spontaneous gatherings, which are often marked by emotionally charged crowds, such as celebrity sightings and religious events. The latter is typical in India and is driven by digital communities. Crowd management combines quantitative techniques with qualitative methods and theories. For instance, the science stipulates that if there are more than five people per square metre, movement will be constrained, requiring intervention. Qualitative methods, for example, include ruses such as installing mirrors to make people see themselves, reinforcing individual identity, which can be lost and lead to irrational, panic-stricken behaviour. Contrary to popular impression, expressive crowds gathering for religious reasons are open to leadership and guidance. In India, the police learn crowd control on the field and through experience shared by veterans, who discuss using mobile loudspeakers to calm crowds and maintain order through clear instructions. Crowd control and management must become subjects of serious academic study so that measures to prevent accidents are commonly known and implemented across India.



INDIA'S ONLINE TAKEDOWN MECHANISM POLITICALLY MOTIVATED: US IN KEY REPORT

The US government, in a key report, has noted that since 2021, American companies like Facebook, Instagram, YouTube, and X have been subject to an “increasing number of takedown requests” for content and user accounts related to issues that appear “politically motivated”.

Key Takeaways:

- The report, called the 2026 National Trade Estimate Report on Foreign Trade Barriers, was released by the Office of the United States Trade Representative (USTR), outlines “significant foreign trade barriers facing US exports” in various countries.
- For India, the report has flagged a number of barriers that American companies face in the country, ranging from its laws for the digital ecosystem — like the IT Rules, 2021 and the data protection law — to UPI and agriculture, among others.
- The USTR’s comments on India’s censorship mechanism comes as the government is tightening its control over the internet, and recently proposing it to broaden to what independent news creators and citizen journalists post on social media. Queries sent to the Ministry of Electronics and Information Technology did not elicit a response.
- In February 2021, the Indian Government published regulations — the Information Technology (Intermediary Guidelines and Digital Media Ethics Code) Rules, 2021 (IT Rules) — to govern a wide range of Internet-based service providers, particularly those that operate social media, messaging, and news and entertainment content in India, the USTR report said.
- It added that these rules require compliance by significant social media intermediaries — companies like Meta, Google etc — and platforms with five million registered users or more, along with a number of requirements that “US stakeholders have identified as concerning”.

Do You Know:

- Last month, draft amendments to the Information Technology (Intermediary Guidelines and Digital Media Ethics Code) Rules, 2021 proposed that the Ministry of Information and Broadcasting (MIB) would be able recommend issuing of direct blocking orders to independent news creators online, and require them to apologise, or make changes to the content, if found guilty of any grievances received by an inter-departmental committee.
- Popular news and current affairs creators could fall under the ambit of these proposed changes, since they are currently not defined as publishers. In fact, the proposed rules could be even wider in their coverage. For instance, even if a creator does not regularly make content related to news or current affairs, but creates something involving a current topic — say a stand-up comic making a joke about a government policy — could potentially fall under its ambit.
- India is also planning to decentralise a key online content takedown framework and empower multiple ministries and regulators to start sending blocking orders to social media companies, raising concerns over an expanding censorship regime, The Indian Express had earlier reported.
- These are only some of the ways in which the government is doubling down on blocking content on social media. Other attempts include shortening content takedown timelines for online platforms significantly, plans to introduce new no-go areas under a new definition of “obscene”



content, and of course, expanding a parallel content blocking mechanism under Section 79 (3)(b) of the IT Act, which is managed through the Home Ministry's Sahyog portal.

- In February, the IT Ministry notified amendments to the Information Technology (Intermediary Guidelines and Digital Media Ethics Code) Rules, 2021.

MHA'S AI VISION: PREDICTIVE POLICING, DARK WEB MONITORING, ENDING MULE ACCOUNTS

From real-time surveillance and predictive policing to behavioural analysis and crime pattern recognition, the Ministry of Home Affairs is leveraging artificial intelligence (AI) as "a critical enabler" in strengthening India's internal security architecture, according to a Parliamentary Committee report tabled in Lok Sabha.

Key Takeaways:

- The MHA, as per the report titled 'Impact of emergence of Artificial Intelligence and related issues', by the Parliamentary Standing Committee on Communications and Information Technology, chaired by BJP MP Nishikant Dubey, stated that it is using AI to enhance operational capabilities across police forces, paramilitaries, and other agencies by enabling faster, more informed decision-making.
- Apart from Dubey, the 31-member committee includes BJP MPs Kangana Ranaut and Anil Baluni, TMC MP Saket Gokhale, Shiv Sena (UBT) MP Priyanka Chaturvedi and Congress MP K T S Tulsi, among others.

Do You Know:

- Here are the key takeaways from the report tabled.

—Modernising cybercrime reporting: The Indian Cyber Crime Coordination Centre (I4C), the nodal anti-cybercrime agency under the MHA, is planning to implement an AI-assisted complaint registration system for the 1930 helpline to reduce time to lodge complaints and improve user experience through guided interaction.

—Proactive Monitoring Tool: An AI-based tool developed by CDAC Mumbai, this is currently being used to screen and verify Child Sexual Exploitative and Abuse Material (CSEAM) content in cyber tipline received via National Centre for Missing and Exploited Children before they are forwarded to agencies.

—Dark web: I4C uses AI-based tools to monitor dark web, scam websites, and fraud networks for tracking cybercrime discussions, phishing campaigns, and suspicious financial transactions.

—Mule hunter app: A draft MoU is under process between RBIH and I4C to enhance efficiency of the 'mule hunter application', an in-house AI/ML-based solution.

—Surakshini: Under the proposed initiative, a dedicated Mitigation Centre will be established to strengthen the process for removal of vulgar content.

- According to the report, forensic departments functioning under the MHA, are equipped with technologies such as the Video Spectral Comparator, Projectina, advanced digital



stereomicroscopes, Traso Scan, ProScope, and other specialised instruments, along with trained personnel.

- The report also said that while the Bureau of Immigration (BoI) is currently not using AI for the immigration process, the Immigration, Visa Foreigners Registration and Tracking (IVFRT) (Version 3.0), commences on April 1, 2026. It aims at a “comprehensive transformation of India’s immigration, visa, and traveller management ecosystem by leveraging emerging technologies such as AI and ML for intelligent traveller profiling, and exploring Blockchain to enhance authenticity and security of digital records”.

NCERT GETS DEEMED VARSITY STATUS, SCHOOL BODY NOW UNDER UGC FRAMEWORK

Nearly three years after the Union government signalled its intent to expand its mandate, the National Council of Educational Research and Training (NCERT) has been formally declared an institution “deemed to be university,” marking a structural shift in the role of the country’s apex school education body, The Indian Express has learnt.

Key Takeaways:

- The new status significantly expands NCERT’s mandate beyond school curriculum design, enabling the body to launch academic programmes, including doctoral and innovative courses.
- A notification issued by the Ministry of Education on Monday (March 30), declares NCERT, along with its six constituent units, as an institution deemed to be university under a “distinct category,” under Section 3 of the University Grants Commission (UGC) Act, 1956. “The Ministry of Education, on the advice of the UGC, hereby declares National Council of Educational Research and Training... consisting of... six constituent units as an Institution deemed to be University under distinct category,” it states.
- These constituent units include regional institutes of education in Ajmer, Bhopal, Bhubaneswar, Mysuru and Shillong, along with the Pandit Sunderlal Sharma Central Institute of Vocational Education in Bhopal.
- The declaration follows a multi-stage process that began with NCERT’s application on the UGC portal, followed by a Letter of Intent issued in August 2023. According to the notification, the institution submitted a compliance report in November 2025, which was accepted by the UGC’s expert committee and approved during its 595th meeting on January 30 this year.

Do You Know:

- The notification mandates that NCERT “shall take appropriate steps to commence research programmes as well as doctoral and innovative academic programmes”.
- It also brings NCERT squarely within the regulatory ambit of the UGC, a key concern raised by critics earlier. The notification makes clear that “the academic programmes to be offered at NCERT... shall conform to the norms and standards prescribed by the UGC,” and that any new courses or off-campus centres must follow UGC guidelines.
- Further, NCERT is barred from commercial activity, with the notification stating it “shall not engage or indulge in any activities that are of commercial and profit making in nature”.



- The institution will also be required to align itself with broader higher education frameworks, including participation in national rankings and accreditation systems. It “shall participate in annual Indian rankings issued by National Institutional Ranking Framework (NIRF)” and seek accreditation from bodies such as NAAC and NBA, said the notification.
- When the proposal was first announced in 2023, Union Education Minister Dharmendra Pradhan had said the move would help NCERT evolve into a research-driven institution and expand its global academic engagement.

ISRO INVITES PROPOSALS FOR OBSERVATION TIME ON ADITYA-L1

The Indian Space Research Organisation (ISRO) has released the second Announcement of Opportunity (AO) inviting proposals from the Indian solar physics community for observation time on the Aditya-L1 mission.

The Aditya-L1 is India’s first dedicated space-based solar mission and has been making continuous and comprehensive observations of the sun from the sun-earth L1 point.

“The Aditya-L1 mission marks a major milestone in India’s space science programme. Scientific data from the mission are regularly released in the public domain for global scientific utilisation,” ISRO said.

At present, there are more than 27 TB of data in the public domain, and several important scientific results have been published in international peer-reviewed journals.

ISRO has invited proposals for the second Aditya-L1 AO to utilise observation time from the Visible Emission Line Coronagraph (VELC) and the Solar Ultra-violet Imaging Telescope (SUIT).

The proposals must be submitted electronically through the Aditya-L1 Proposal Processing System (ALPPS) hosted at the Indian Space Science Data Centre (ISSDC). ALPPS can be accessed via the ISSDC website. Approved observations for this second AO cycle will be conducted between July 2026 and September 2026.

The deadline for submission of proposals is April 30, 2026.

WAR LESSONS FOR MILITARY: RETHINKING AIR DEFENCE, COUNTERING DRONES TO TARGETS

Drawing lessons from the ongoing war in West Asia, the Indian military brass have begun discussions focused on the need for procurement of anti-drone systems and their large-scale integration with existing legacy air defence weapon systems to create an effective umbrella against small enemy drones, The Indian Express has learnt.

Key Takeaways:

- Acquisition of high-quality swarm drones and robotic capability to disrupt enemy logistics and supply chains while targeting the adversary’s manufacturing capacity are among the first lessons drawn from the month-old war.
- Senior military officers said India will also have to undertake passive measures such as dispersion, concealment, camouflage, force preservation, underground infrastructure, and fighting wars in a decentralised manner.

3RD FLOOR AND 4TH FLOOR SHATABDI TOWER, SAKCHI, JAMSHEDPUR



- According to one of the officers, Iran's use of swarm drones as one of the preferred offensive options highlights the need to enhance Indian counter-drone capability in a cost-effective manner.
- During the hostilities that followed Operation Sindoor in May last year, Pakistan sent swarms of inexpensive drones into the Indian territory, while camouflaging some armed and surveillance drones.

Do You Know:

- Unmanned aerial vehicles (UAVs) date back to World War II and the Korean War, where they were used for training anti-aircraft gunners and in specific offensive missions. Their modern military usage took off in the 1990s, after being successfully deployed in the Gulf War of 1991.

- Swarm drones are autonomous or semi-autonomous UAVs that operate in coordinated groups, much like swarms of birds or fish. They communicate via wireless networks and adjust in real time to achieve shared objectives.

—Swarms are more resilient than traditional drones due to in-built redundancy — even if one drone is intercepted, others can continue on the mission. Drone swarms are thus used to saturate air defences (a few payloads may sneak through even robust defences), gathering intelligence, and attacking high-value targets.

- According to Fortune Business Insights, the global military drone market stood at \$14.14 billion in 2023, and is projected to hit \$47.16 billion by 2032.

- Defence against drones begins with detection. Modern systems employ a mix of AESA radars, electro-optical and infrared sensors, acoustic detectors, and AI-powered fusion systems.

—Once detected, one option is for drones to be neutralised through kinetic means, that is, with missiles and anti-aircraft guns. But traditional kinetic air defences, especially surface-to-air missiles (SAMs), are costly, and less effective against swarms. Automated gun systems such as C-RAM and Phalanx, which track targets and fire autonomously, are preferred in this role.

- More cost-effective alternatives include:

—Directed Energy Weapons (DEWs): Lasers and microwave pulses that disable drones by damaging sensors or frying electronics;

—Electronic Warfare (EW): Jamming GPS signals or communication links;

—Spoofing: Misleading drones about their location or issuing false commands;

—Cyber Attacks: Taking control of drones and crash them by exploiting software vulnerabilities; and

—Interceptor drones & nets: For close-range neutralisation, protecting critical assets.

- India's capabilities—Since 2020, India has ramped up its counter-drone infrastructure, deploying a layered defence that blends indigenous technology, EW, and air defence systems. Key systems include:

—Akashteer Air Defence Control System: Developed by Bharat Electronics Ltd, it integrates with the Indian Air Force's integrated command network for real-time tracking;



—Bhargavastra: Solar Defence and Aerospace Ltd’s weapon system fires 64 micro-rockets in salvos to eliminate drone swarms;

—DRDO’s Anti-Drone System: It offers 360-degree radar coverage, with both jamming (soft kill) and laser (hard kill) capabilities. Drones can be detected up to 4 km away, and neutralised within a 1 km radius; and

—Indrajaal: An AI-powered grid from a Hyderabad startup that combines jammers, spoofers, and intelligence to protect areas up to 4,000 sq km. Already deployed at naval sites in Gujarat and Karnataka.

—During the May 2025 swarm attacks, the IAF activated its Integrated Counter-UAS Grid, alongside conventional radars, guns, and missiles, neutralising attempted strikes on 15 military bases and several urban targets.

INS ARIDHAMAN, NUCLEAR-POWERED SUBMARINE, ENTERS INDIA’S NAVAL FLEET

India Friday inducted its third nuclear-powered ballistic missile submarine (SSBN), INS Aridaman, significantly strengthening its sea-based nuclear deterrent capabilities. The Indian Navy also commissioned the advanced stealth frigate INS Taragiri at a separate ceremony.

Key Takeaways:

— The quiet commissioning of INS Aridhaman, which will significantly strengthen India’s sea-based nuclear deterrent capabilities, is in line with how the previous two indigenous Arihant-class submarines, INS Arihant and INS Arighaat, were inducted in 2016 and 2024 respectively.

— INS Aridaman, a 7,000-tonne vessel, is believed to have eight vertical launching system tubes — around double the number of its predecessors.

— This means it can carry more K-15 nuclear-capable submarine-launched ballistic missiles (SLBM), which have a range of more than 700 km. They can also carry the longer-range K-4 SLBMs that can hit targets 3,500 km away.

— It is also powered by advanced reactors — understood to be an upgrade over the ones that power its predecessors — to ensure it can remain submerged for longer durations (months together) without needing to surface every few days.

— A fourth SSBN is also currently under construction, and, like the Aridaman, will also be able to carry more K-4 missiles owing to its larger size.

— India’s nuclear-powered submarine project was initiated more than three decades ago, involving both private firms and the Defence Research & Development Organisation, with help from Russia.

— INS Arihant was launched in 2009 and commissioned into the Navy in 2016 as its first nuclear-powered submarine. This provided India with a maritime strike capability for the first time.

— INS Arihant conducted its first deterrence patrol in 2018, thus establishing India’s nuclear triad. In October 2022, the Ministry of Defence announced the successful launch, “with very high accuracy”, of an SLBM in the Bay of Bengal by Arihant.



— Both INS Arihant and INS Arighaat are powered by 83 MW pressurised light-water nuclear reactors, which allow it to remain submerged and undetected for much longer than conventional diesel-electric submarines.

— India is pursuing a nuclear-powered attack submarine (SSN) programme. The Navy plans to build two SSNs indigenously and acquire one on lease from Russia, which is expected to arrive by 2027-28 and bridge the capability gap until India's own boats are ready.

— India and Germany are finalising a deal for the Project-75I submarine program, as part of which Germany's ThyssenKrupp Marine Systems will partner with India's Mazagon Dock Shipbuilders Ltd to construct six advanced AIP-equipped conventional submarines in India.

— Aside from the SSBNs, the Indian Navy has 16 conventional submarines in service. This includes six Kalvari-class attack submarines built at India's Mazagon Dock in partnership with France's Naval Group, four Shishumar class subs, and seven Kilo (Sindhughosh) class subs.

— To carry out its full spectrum of operations, the Navy is authorised to have 18 submarines. However, at any time, around 30 per cent of the fleet is under refit (repair and renovation), which brings down the strength of operational submarines.

Do You Know:

— A commitment to not be the first to use a nuclear weapon in a conflict has long been India's stated policy. Pakistan, by contrast, has openly threatened India with the use of nuclear weapons on multiple occasions beginning from the time the two nations were not even acknowledged nuclear powers.

— On January 4, 2003, when Vajpayee was India's Prime Minister, the Cabinet Committee on Security (CCS) met to review the progress in operationalizing the country's nuclear doctrine. An official release issued that day summarized the decisions that were being put in the public domain.

— Among the major points in the doctrine was "a posture of No First Use", which was described as follows: "Nuclear weapons will only be used in retaliation against a nuclear attack on Indian territory or on Indian forces anywhere".

INS TARAGIRI

— INS Taragiri, the fourth potent platform of the Project 17A class, was commissioned in the Indian Navy at Visakhapatnam, Andhra Pradesh, on April 03, 2026.

— It is built under the codename Project 17A, a follow-on vessel of the Shivalik class or Project 17 frigates that are currently in service. It is built by Mazagon Dock Shipbuilders.

— The 6,670-tonne warship features advanced design elements, including reduced radar cross-section for stealth operations and enhanced survivability in complex environments.

— The ships are fitted with a supersonic surface-to-surface missile system, a Medium Range Surface-to-Air Missiles (MRSAM) system, a 76 millimetre upgraded gun, and a combination of rapid-fire close-in weapon systems.



The frigate is equipped with modern weaponry and systems, including BrahMos missiles, radar and sonar technologies, and is capable of high-speed transit, extended deployment and multi-role operations ranging from combat to humanitarian missions

INDIA'S DEFENCE EXPORTS ROSE BY 62.66% IN '25-26 TO REACH ALL-TIME HIGH OF RS 38,424 CR

India's defence exports in the Financial Year (FY) 2025-26 reached a record Rs 38,424 crore, registering a 62% year-on-year increase over the previous fiscal year's figure of Rs 23,622 crore.

Key Takeaways:

- Defence Public Sector Undertakings (DPSUs) and the private sector contributed 54.84% and 45.16% in registering the feat. Defence Minister Rajnath Singh lauded the Department of Defence Production, Indian defence exporters and asserted that India is marching ahead towards becoming a global manufacturing hub for defence equipment.
- Compared to the last year, the DPSUs' exports surged by 151%, with private firms showcasing robust growth by registering an increase of 14%. The private sector accounted for Rs 17,353 crore worth of defence exports, whereas the DPSUs contributed Rs 21,071 crore.

Do You Know:

- The global volume of major arms transfers between states in 2021–25 was 9.2 per cent higher than in the previous five-year period (2016–20), according to the latest report from the Stockholm International Peace Research Institute (SIPRI). It also stated that arms imports by states in Europe more than trebled between the two periods (+210 per cent).
- The volume of international transfers of major arms in 2021–25 was 9.2 per cent higher than in 2016–20. This was the biggest increase since 2011–15.
- SIPRI has identified 66 states as suppliers of major arms in 2021–25. The five largest suppliers of major arms in 2021–25 were: the USA, France, Russia, Germany and China. These five countries accounted for 70 per cent of all arms exports.
- SIPRI has identified 162 states and 4 non-state armed groups as recipients of major arms in 2021–25. The top five recipients of major arms in 2021–25 were—Ukraine, India, Saudi Arabia, Qatar and Pakistan—received 35 per cent of total global arms imports in the period.
- Established in 1966, SIPRI is an independent international institute dedicated to research into conflict, armaments, arms control and disarmament. It provides data, analysis and recommendations, based on open sources, to policymakers, researchers, media and the interested public.

MOST PARTS OF INDIA TO SEE MORE HEATWAVE DAYS: IMD

North India is likely to experience a cooler-than-normal summer this time, while other parts of the country may see more number of heatwave days, the India Meteorological Department (IMD) said on Tuesday.



From April to June, above-normal maximum temperatures are expected over most parts of east and northeast India, as well as eastern parts of central India, and adjoining peninsular regions. Maximum temperatures are likely to be “normal to below normal” over the remaining parts.

There will likely be more than the usual number of heatwave days over parts of east, central and northwest India, and southeast peninsula during this period. Many parts of coastal Odisha, West Bengal, Tamil Nadu, Puducherry, Andhra Pradesh, and some regions of Gujarat, Maharashtra and Karnataka are likely to see heatwaves in April.

El Nino fears

The country will likely receive 12% more rain than usual in April.

In July, however, forecasts suggest the emergence of an El Nino, warming of regions of the Central Pacific Ocean that frequently links to reduced rain in India. Experts said it is still early to link cooler summers to diminished monsoon rainfall though it is a pattern that has held in the past. The IMD is expected to provide an initial forecast on the expected performance of monsoon 2026 on April 15. India experienced surplus monsoon in 2024 and 2025. With fertilizer output expected to be hit this year on account of the Iran-Israel-U.S. war, weak rainfall could impact kharif sowing.

“Cooler than normal summer means less heating of the landmass, which typically acts as a natural pull for moisture and monsoon. This could affect the onset of the monsoon and its initial progress [over Kerala in June],” said Madhavan Rajeevan, climatologist and former Secretary, the Ministry of Earth Sciences.

“However a clearer picture could emerge only around end May. There is also a forecast for a ‘super’ El Nino. We shouldn’t worry now but if these signals persist in May, the government should prioritise drought management.”

HOW WILL THE NEW NDC ACCELERATE CLIMATE ACTION?

The story so far:

On Wednesday, the Union Cabinet approved India’s updated Nationally Determined Contribution (NDC). This includes committing to have 60% of its installed electric capacity from non-fossil sources by 2035, reducing by 47% the intensity of emissions per unit of GDP (from 2005 levels), and increasing its carbon sink to 3.5 billion-4 billion tonnes of CO₂ equivalent. These targets will be communicated to the United Nations Framework Convention on Climate Change. They arrive at a moment when a new analysis shows that India’s CO₂ emissions in 2025 grew at the slowest rate in more than two decades.

Are NDCs voluntary or mandatory?

Under the Paris Agreement, every signatory country must periodically submit NDCs, which are voluntary pledges spelling out how they will transition away from fossil fuels. India’s previous NDC, conveyed in August 2022, committed it to 50% non-fossil installed capacity by 2030, a 45% reduction in emissions intensity, and a carbon sink of at least 2.5 billion-3 billion tonnes of CO₂-equivalent.

The new targets raise each threshold. The 60% non-fossil capacity target is notable because India has already proven it can get there: as of early 2026, about 52% of installed capacity comes from non-fossil sources, a target met well ahead of the 2030 deadline. India and Argentina were the



only G20 nations that had not announced a 2035 NDC by the end of 2025, so this announcement closes a conspicuous gap in the global ledger of climate pledges.

Have NDCs actually prodded countries towards clean energy?

This is the central question that hangs over every NDC cycle, and the evidence is decidedly mixed. The United Nations Environment Programme Emissions Gap Report 2025, titled 'Off Target', delivered a blunt verdict: nations have had three attempts to hit the mark with their NDCs since 2015, and each time they have landed off target. Projected warming fell from 2.6-2.8°C to 2.3-2.5°C, but methodological updates accounted for much of the improvement, and the U.S.'s withdrawal from the Paris Agreement cancels out another chunk. NDCs submitted so far close less than 14% of the emissions gap needed to reach 1.5°C, according to the World Resources Institute.

The details are more damning. E3G's NDC Energy Commitments Tracker, which assessed 101 submissions by late 2025, found that while 94% of countries included some commitment to at least one energy transition goal, not one presented a comprehensive plan aligned with the COP28 energy package. This was an agreement, called the 'UAE Consensus', by nearly 200 countries in December 2023 to accelerate climate action by transitioning away from fossil fuels, tripling global renewable energy capacity, and doubling energy efficiency improvements by 2030 to limit warming to 1.5°C. However, no country set a target for winding down oil and gas production. Nearly three-quarters did not mention fossil fuel subsidy reform. And most developing country NDCs depend on international finance, which is woefully short of the required scale.

The paradox, then, is this: the clean energy transition is accelerating anyway. Global solar and wind installations reached a record 814 GW in 2025. Renewables surpassed coal as the largest source of electricity globally in the first half of 2025. But this boom has been driven primarily by plummeting costs and industrial competition — particularly China's dominance in manufacturing — rather than by NDC-driven policy mandates. The NDC process, in other words, has been better at documenting ongoing progress than at driving the structural changes needed to phase out fossil fuels.

What does India's emissions data tell us?

A new analysis by the Centre for Research on Energy and Clean Air (CREA), published by Carbon Brief, finds that India's CO₂ emissions grew by just 0.7% in 2025, the slowest rate since 2001 excluding the Covid year of 2020. This is a dramatic deceleration from 4-11% growth in 2021-24. The power sector was the key driver: emissions fell 3.8%, after coal-fired generation declined for the first time outside of Covid since 1973. CREA underlines that India added 47 GW of solar, 6.3 GW of wind, 4 GW of hydro, and 0.6 GW of nuclear in 2025 or enough new clean generation to cover demand growth of up to 5%.

Not all sectors followed suit. Steel surged 8% and cement 10%, driving the small overall increase. The analysis suggests India's power sector could reach an inflection point as early as 2026, where newly added clean generation matches annual demand growth. The Central Electricity Authority's National Generation Adequacy Plan projects non-fossil sources reaching 786 GW — 70% of the total — by 2035-36, with solar alone crossing 500 GW. Sceptics note that 2025 had mild summers, minimal heatwaves, and weak industrial growth. This means this may be an aberration and a trend requires a few years to confirm.



What should we watch for?

India's NDC uses emissions intensity — emissions per unit of GDP — as its yardstick. Absolute emissions can continue rising as long as the economy outpaces them. India has defended this on grounds of equity, and as a legitimate framework for a country whose per-capita emissions remain a fraction of those in the West.

But contradictions persist. India plans 100 GW of new coal-fired capacity over seven years, \$1 trillion in petrochemical investment by 2040, and a 50% increase in coal-based steel capacity by 2031. Over 37 GW of renewable capacity remains stranded due to gaps in grid readiness, as Vibhuti Garg of the Institute for Energy Economics and Financial Analysis has pointed out. Carbon sinks, one of the least discussed aspects of NDCs, require maintaining forest cover. India is far from its 33% target, currently at about 24%, including trees outside forests that critics argue may be unreliable as carbon sinks.

INDIA FACES CHALLENGE IN MEETING 2030 MATERNAL MORTALITY GOALS, SHOWS STUDY

A recent study in *The Lancet Obstetrics, Gynaecology, and Women's Health* journal shows the challenge before India in meeting the Sustainable Development Goal of bringing down the Maternal Mortality Ratio (MMR) to below 70 deaths per 1 lakh live births by 2030.

Key Takeaways:

— While the country has successfully brought down maternal mortality numbers from 1.19 lakh in 1990 to 36,900 in 2015 and 24,700 in 2023, the progress has slowed. As per the study, 'Global Burden of Diseases, Injuries and Risk Factors', while the MMR in India stood at 508 in 1990, it was down to 116 deaths per lakh live births in 2023.

— India accounted for one-tenth of all maternal mortality numbers in 2023, the study says, putting the total deaths globally at 2.4 lakh.

— The study also shows that 100 of the 204 countries and territories covered had reached the 2030 SDG target of below-70 MMR by 2023. Of the 104 not yet meeting the target, 15 had MMR in the range of 70 to 100, 16 between 100 and 140 (including India), and 73 MMR greater than 140.

— Apart from India, the countries struggling to meet the SDG 2030 target include the Democratic Republic of the Congo, Ethiopia, Nigeria and Pakistan.

— Given the low starting point, India, however, remains among countries to have seen the most substantial improvement in MMR since 1990, along with Bangladesh, Ethiopia, Morocco, Nepal and Rwanda.

— Dr Anjali Radkar, a demographer and former Professor and Head, Centre for the Study of Social Inclusion, Gokhale Institute of Politics and Economics, says that within India, while the South and some states are on course to achieving the SDG target by 2030, the overall MMR is being pulled down by states such as Assam and Uttar Pradesh.

— As per the Sample Registration System (SRS), which is the major source of fertility and mortality rates in India, while India's MMR declined from 122 per one lakh live births in 2015-17 to 88 in 2021-2023, MMR in Assam came down from 215 to 110 in the same period, and in UP, from 197 to 141, Radkar pointed out.

3RD FLOOR AND 4TH FLOOR SHATABDI TOWER, SAKCHI, JAMSHEDPUR



— The demographer advised targeted action, including by strengthening primary healthcare systems, with a focus on maternal and child health. “When child mortality declines, fertility rates tend to decrease as well. Lower fertility in turn, contributes to a reduction in maternal mortality... This integrated approach can play a key role in reducing MMR,” she said, adding that unless maternal mortality was reduced, the global SDG goals for maternal health would also remain out of reach.

— As per the Lancet study, haemorrhage and hypertensive disorders – easily preventable – accounted for nearly half (above 40%) of the maternal deaths in 2023. Setbacks to general healthcare during Covid are believed to have played a role in the slide seen in 2020-21.

Do You Know:

— Maternal mortality is defined as deaths due to obstetric complications or comorbid disorders exacerbated by pregnancy, up to 1 year after the end of the pregnancy, irrespective of the method by which pregnancy ended.

CANCER 10TH LEADING CAUSE OF DEATH AMONG KIDS IN INDIA: STUDY

Childhood cancers were the eight leading cause of death in children globally — killing more than common infectious conditions such as measles, tuberculosis, and HIV/AIDS.

Key Takeaways:

- With outcomes largely determined by resource availability, 94% of the deaths in 2023 were concentrated in low and middle income countries, according to the latest findings from the Global Burden of Disease (GBD) 2023 study published today in The Lancet.
- There were 377,000 new cases of childhood cancer and 144,000 deaths worldwide in 2023, according to the research.
- The number of new cases of childhood cancers has been relatively stable globally, while the number of deaths have decreased by 27%. These cancers, however, were concentrated in the low and middle income countries. The estimates show that 85% of new cases, 94% of deaths, and 94% of disability-adjusted life years (DALYs) in 2023 were from these countries.
- DALYs measure the total years of healthy life lost by examining the years lost from premature death and years lived with disability.

Do You Know:

- In India, childhood cancers were the tenth leading cause of deaths among children, killing 17,000 in 2023, according to the study. “Despite this childhood cancer is not included in India’s national cancer control planning,” Dr Venkatraman Radhakrishnan, Professor of Medical Oncology at the Cancer Institute (W.I.A), Adyar, Chennai, said.
- The national programme screens only for the three most common forms of cancers seen in men and women — oral, cervical, and breast.
- While mortality declined globally, the estimates show that the children in low and middle-income countries face the most severe consequences. South Asia accounts for 20.5 percent or one



in five global child cancer deaths. Not only that, the report shows there was a 16.9 percent increase in childhood cancer deaths from 1990 to 2023.

- Acute leukaemia was the most common cancer, accounting for 40.9 per cent of cases, followed by Hodgkin lymphoma at 12.9 per cent, bone tumours at 8.4 per cent, and retinoblastoma at 7.4 per cent. Almost all children received chemotherapy, about one-third underwent surgery, and one-quarter received radiotherapy.

QDENGUA: A STEP FORWARD AGAINST DENGUE, BUT NOT A SILVER BULLET

India's long wait for a dengue vaccine may finally be coming to an end. Takeda's tetravalent dengue vaccine, TAK-003 (called 'Qdenga'), recently received clearance from the Subject Expert Committee (SEC) under the Drugs Controller General of India (DCGI) for use among individuals aged 4 to 60 years. This marks a significant milestone in the country's fight against a disease that causes millions of infections and thousands of hospitalisations every year, especially among children.

While India has not experienced a large nationwide dengue surge in the past year, the disease remains endemic, with substantial transmission and a long-term rising trend. For decades, dengue control in India relied almost entirely on vector control measures such as eliminating mosquito breeding sites, insecticide use, and public awareness campaigns. While essential, these strategies have had limited success in preventing recurring outbreaks. The arrival of a vaccine, therefore, represents a shift from a reactive to a more preventive approach.

TAK-003 comes with several advantages. It has been evaluated in large global trials involving more than 28,000 participants and has already been approved in more than 40 countries. Importantly, unlike an earlier dengue vaccine, it does not require pre-vaccination screening to determine prior dengue infection, making it simpler to use in real-world settings. The vaccine has also demonstrated good safety and, crucially, strong protection against severe dengue and hospitalisation — both outcomes that matter the most in clinical practice.

In a country like India, where healthcare systems are often stretched during dengue seasons, even a modest reduction in the number of severe cases could have a substantial impact. Fewer hospital admissions, reduced intensive care burden, and lower mortality in children and adolescents would all represent meaningful gains.

Challenges and limitations

However, it is equally important to recognise what this vaccine can and cannot achieve. Dengue is caused by four closely related but distinct viruses, known as serotypes (DENV-1 to DENV-4). Immunity to one serotype does not guarantee protection against the others, and in some cases, can even predispose an individual to more severe disease upon subsequent infection. This makes developing a vaccine for dengue uniquely challenging: an effective vaccine must provide balanced protection against all four serotypes.

Herein lies a key limitation of TAK-003. While it performs very well against the DENV-2 serotype, since it was developed on the DENV-2 backbone, and reasonably well against DENV-1, its effectiveness against DENV-3 and DENV-4 appears to be lower — particularly in individuals who have not previously been infected with dengue.



This is not merely a theoretical concern. India's dengue epidemiology is evolving, with increasing reports of DENV-3 becoming more prominent in several regions.

Recent data from India also show that all four dengue serotypes continue to co-circulate, with DENV-2 still predominant in many regions but DENV-3 contributing a substantial and increasing proportion of cases.

For instance, surveillance from North and Western India has reported DENV-2 accounting for around 48-66% of cases, followed by DENV-3 at around 20-30%, with DENV-1 and DENV-4 contributing smaller shares.

If this trend continues, the overall effectiveness of the vaccine at a population level may be lower than expected. In simple terms, while vaccinated individuals are still likely to be protected from severe disease, they may continue to experience dengue infections, especially during outbreaks dominated by DENV-3.

This distinction is crucial. TAK-003 is best understood as a vaccine that modifies the disease rather than as one that blocks transmission. In other words, it is likely to reduce the severity of illness rather than prevent infection altogether. As a result, dengue outbreaks will not disappear and public health measures such as vector control will remain indispensable.

Another important consideration is cost and access. Dengue vaccines are expected to be relatively expensive, and TAK-003 requires two doses administered three months apart. The expected price of TAK-003 in India is likely ₹3,000-6,000 per dose and ₹6,000-12,000 for the full course. While public programmes may offer the shots at lower prices, questions about affordability and compliance — particularly among lower-income and rural populations — remain unanswered. At least in the initial years, uptake is likely to be limited to the private sector or targeted programmes in areas with a high burden of dengue.

The SEC has appropriately mandated post-marketing safety and effectiveness studies in the Indian population. These will be critical to understand how the vaccine performs in real-world conditions, across different regions and serotype patterns.

Looking ahead, TAK-003 may be only the first step in India's dengue vaccine journey. A second generation of vaccines, based on a different scientific approach developed by the U.S. National Institutes of Health (NIH), is currently under evaluation.

Indian pipeline

India's dengue vaccine pipeline is advancing, with an indigenous candidate called 'DengiAll', developed by Panacea Biotec in collaboration with the Indian Council of Medical Research, currently undergoing large phase III clinical trials.

A similar vaccine has already been approved in Brazil and it has shown strong protection against severe dengue. If the Indian candidate is also successful, it could be available around 2027. These vaccines aim to provide more balanced protection across all four serotypes and may offer the additional advantage of a single-dose regimen.

Early data from similar vaccines tested elsewhere are also promising, particularly in terms of protecting against severe dengue and broader serotype coverage. If these findings are confirmed in Indian trials, such vaccines could be better suited for large-scale public health deployment.



For policymakers, the challenge will be to balance urgency with prudence. There is a clear and immediate need to reduce the burden of severe dengue and TAK-003 is a valuable tool with which to achieve this. At the same time, the long-term strategy must remain flexible, allowing for the country to adopt better vaccines as the evidence evolves.

For clinicians, clear communication will be essential. Their own and their patients' expectations need to be realistic: the vaccine is not a cure-all but it is a meaningful step forward. Even if it does not eliminate dengue, it can save lives and reduce complications.

Ultimately, the introduction of a dengue vaccine in India should be seen not as the culmination of efforts but as the beginning of a new phase. Success will depend not only on the vaccine itself but also on how well it is integrated with surveillance, vector control, and future innovations.

In public health, progress often comes incrementally. TAK-003 may not be the final answer to dengue in India but it is undoubtedly an important start.

GREAT INDIAN BUSTARD BIRTH IN GUJARAT AFTER A DECADE, WITH EGG FROM RAJASTHAN

For the first time in a decade, Gujarat saw the birth of a Great Indian Bustard (GIB) chick on March 26 — after a “trans-state conservation effort” that involved an “arduous 770-km road journey” across a “halt-free corridor” to transport a 15-day old fertile egg from Sam in Rajasthan’s Jaisalmer district to Naliya in Gujarat’s Kutch district.

Key Takeaways:

— This is the country’s first birth of the critically endangered bird under the “jumpstart” method, where a female GIB in Kutch, which had laid an infertile egg, incubated a fertile egg chosen from a captive breeding centre in Jaisalmer.

— Announcing the birth on Saturday, Union Environment Minister Bhupender Yadav said in a post on X: “Gujarat sees a GIB chick after a decade, through a novel conservation measure — the jumpstart approach, coordinated by the Ministry, State Forest Departments of Rajasthan and Gujarat, and Wildlife Institute of India.”

— This is a significant development for the GIB conservation programme. Gujarat has only three surviving GIBs in the wild, and all are female. Hence, their eggs are all infertile.

— There are only an estimated 150 GIBs in the wild in the country, mostly in Rajasthan. The large bird, a key indicator species of the grassland habitat, has faced population decline over the years due to hunting, habitat loss, and, in recent years, collisions with energy transmission lines that criss-cross their habitat in Rajasthan and Gujarat.

— Earlier, the WII team and the Gujarat forest department had radio-tagged the female GIB in Naliya to track its movements, and to monitor if it laid an infertile egg.

— Under Project GIB, the WII and Rajasthan forest department have established two captive-breeding centres in Jaisalmer district. Here, eggs collected from the wild have been incubated artificially over the past few years, and chicks have been born even through artificial insemination. This has been done to develop a founder population for the GIB’s long-term recovery.



— Chicks that have attained adulthood at the centre have mated and given birth to the next generation. The number of birds in the conservation breeding centres at Sam and Ramdevra in Rajasthan has now reached 73.

— As part of the preparations, WII tested the “jumpstart” method in Desert National Park in Rajasthan, placing fertile eggs in the nests of female GIBs. In six trials, four fertile eggs were placed in the nests to see if the females would rear and hatch them, while in two cases, wooden eggs were placed.

— Last July, The Indian Express reported that a Supreme Court-appointed expert committee had recommended the “jumpstart” method as a key conservation measure to revive the GIB population. In its report to the SC, the committee had said the female GIBs in Gujarat have been laying infertile eggs, adding that swapping these eggs with fertile ones from Rajasthan’s facilities would be a “rapid approach” to increase the GIB population in Gujarat.

— The seven-member expert committee was tasked with prescribing measures to mitigate GIB deaths from power lines while balancing conservation goals with renewable energy development, and recommend any other conservation measures for the GIB’s survival. Last December, the SC had accepted this recommendation.

Do You Know:

— GIB is a flagship species of the Thar Desert and the state bird of Rajasthan. Notably, Rajasthan has the largest remaining population of the GIBs.

— It is a large bird found only in India. GIBs are the largest among the four bustard species found in India, the other three being MacQueen’s bustard, lesser florican and the Bengal florican.

— Plans to recover the species first started in 2013 under the National Bustard Recovery Plan, which later gave way to the Bustard Recovery Project in 2016. Later, in July 2018, a tripartite agreement was signed between MoEFCC, Rajasthan forest department and WII.

— Conservation status of GIB: IUCN Red List status of Great Indian Bustard: Critically Endangered

— Wildlife Protection Act, 1972: Schedule I

— Convention on the Conservation of Migratory Species of Wild Animals (CMS): Appendix I

— Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES): Appendix 1

ASHOKA CHAMPIONED BUDDHISM; HOW HIS GRANDSON HELPED SPREAD JAINISM

On the occasion of Mahavir Jayanti on Tuesday (March 31), Prime Minister Narendra Modi inaugurated the Samrat Samprati Museum in Koba, Gandhinagar. The museum is dedicated to Jain history and the life of Samrat Samprati, the grandson of the Mauryan ruler Ashoka.

Key Takeaways:

- Unlike Ashoka, who is known for helping spread Buddhism, Samprati is remembered for his deep association with Jainism.



- Samprati was the son of Kunala. Jain texts, in particular, portray him as an adherent who played a significant role in the dissemination of Jina images across the subcontinent.
- Samprati is believed to have reigned between 230 and 220 BCE. According to Cort, “The story of Samprati first emerges in Shvetambara writings... in the context of the rules of monastic practice.”
- Over time, his legacy grew, with anonymous and undated medieval works devoted entirely to him, such as the 461-verse Sanskrit Deeds of King Samprati (Samprati Nripa Charitra).
- Some traditions describe Samprati as a Jain from birth, but most accounts emphasize his conversion under the monk Suhastin, the eighth leader of the Jain congregation established by Mahavira, whom he is said to have met in Ujjain.
- Ashoka’s successors are often faulted for lacking his vision, particularly in their understanding of dhamma. H C Raychaudhuri argues that Ashoka’s rejection of aggressive militarism weakened the empire’s military efficiency. Resentment among Brahmanical groups, provoked by Ashoka’s support of Buddhism and other heterodox sects, his ban on sacrifices etc, may also have encouraged his successors to move away from Buddhism.
- Following his conversion, Samprati is credited with actively promoting Jainism across the subcontinent and beyond — facilitating the movement of monks into distant regions, constructing and renovating thousands of temples, and establishing vast numbers of icons.

Do You Know:

- The rise and spread of the Mauryan Empire in the third century BCE, with all its associated grandeur and administrative order, is well known. Ashoka, who ruled from circa 269 to 232 BCE, is credited with expanding the empire and later instituting a moral framework grounded in Buddhist virtues.
- According to John E. Cort in Framing the Jina: Narratives of Icons and Idols in Jain History (2010): “He created a model for ethical kingship that persists today in the religious and political imaginaire of Buddhist Southeast Asia.” Indeed, Buddhists often regard Ashoka as almost single-handedly responsible for the spread of Buddhism beyond the north Indian landscape.
- Yet, despite the prominence of Buddhism under the Mauryas, Jainism remained an important religious tradition. “Asoka’s wives were predominantly Buddhist, but his first wife, Padmavati, was a Jain,” notes Michael C. Howard in Transnationalism in Ancient and Medieval Societies (2012).
- Another Mauryan figure central to Jain narratives is Ashoka’s grandfather, Chandragupta Maurya, who, Jain traditions say, embraced the faith. “The Digambara historians credit him with leading a migration south to avoid a great famine, and eventually dying in meditation at the holy shrine of Shravana Belgola [in present-day Karnataka],” writes Cort.
- While Chandragupta Maurya is venerated in the Digambara Jain tradition, “for Shvetambaras, the central person in the Mauryan dynasty was Ashoka’s grandson and successor, Samprati,” notes Cort. Although several of Ashoka’s sons are said to have contested the throne after his death in 232 BCE, historical sources offer little consensus on the line of succession.
- A popular theory, also mentioned by Colleen Taylor Sen in Ashoka and the Maurya Dynasty (2022), is that the empire was divided between his grandsons: Dasharatha and Samprati.



SEX TEST FOR WOMEN IN ELITE SPORTS TAKES TOLL ON RIGHT TO EQUALITY, PRIVACY

Last week, the International Olympic Committee (IOC) banned transgender women and athletes with differences in sex development, with some exceptions, from competing in the women's categories for elite sporting events such as Olympic Games. The decision is apparently based on apprehensions about the unfair advantages these athletes may enjoy due to biological reasons. The IOC also mandated a once-in-a-lifetime SRY test or sex test for women athletes. Until now, the Committee had left the matter to international federations. The new policy, the latest in a series of bans and rollbacks, is ostensibly to ensure standardisation — since the “smallest margins” can change outcomes in elite sports. With the 2028 Los Angeles Olympics coming up, it may also have been motivated by a desire to avoid conflict with the Donald Trump administration, which has banned trans women from women's sports.

Questions of accuracy and reliability surround the Sex-determining Region Y (SRY) test. Biological sex is determined by an interplay of chromosomal, gonadal, hormonal, and phenotypic factors. Only testing positive for the SRY gene does not mean that an athlete benefits from the hormone it produces. There is also no conclusive evidence that transgender women hold an athletic advantage over cisgender women. In fact, after the 1996 Olympics, the IOC had started phasing out universal sex testing, stating that it was an inaccurate metric to determine sex and athletic advantage, besides being unethical. Sex testing also disproportionately impacts women from the Global South and women of colour. Their genetic makeup diverges from the Eurocentric standards used for most testing and eligibility criteria.

The ban, alongside mandatory medical testing for women, undermines principles of equality—male athletes do not have to cross the medical test hurdle. It raises the entry barrier for athletes, especially from low-resource backgrounds, and violates women's dignity and privacy. It also diverts attention from the many real obstacles women athletes face: Unequal funding, lack of access to training, pay disparity, gender-based violence, besides stigmatising transgender and DSD athletes. A policy intended to ensure fairness for women in sports needs to be grounded in scientific evidence. It cannot come at the cost of basic rights, and by making conditions for participation tougher for those it claims to protect.

SHORT NEWS

SNAKE ISLAND

— Amid repeated assertions by US President Donald Trump that he may send American troops to seize control of Iran's key oil export terminal at Kharg Island. However, there is a precedent and that ended in disaster.

— Nearly four years ago, and still early into Russia's invasion of Ukraine, Snake Island, or Zmiinyi Island, was seen as a vital asset in the war. Quite like Kharg, this rocky outcrop held by Ukraine was categorised as strategic in the control of the western Black Sea. The island was seized by Russia in February 2022, only to be abandoned in end-June 2022.

— Zmiinyi Island is a small piece of rock less than 700 metres from end to end that has been described as being “X-shaped”. It is located 35 km from the coast in the Black Sea, to the east of the mouth of the Danube and roughly southwest of the port city of Odessa.



— The island, which has been known since ancient times and is marked on the map by the tiny village of Bile that is located on it, belongs to Ukraine.

BLACK SEA

— Black Sea is bordered by Ukraine to the north and northwest, Russia and Georgia to the east, Türkiye to the south, and Bulgaria and Romania to the west.

— It links to the Sea of Marmara through the Bosphorus passage and then to the Aegean through the Dardanelles strait.

— Bosphorus Strait unites the Black Sea and the Sea of Marmara and separates parts of Asian Türkiye from European Türkiye.

— Dardanelles, a narrow strait in northwestern Türkiye, links the Aegean Sea with the Sea of Marmara.

UNITED NATIONS MISSION IN THE REPUBLIC OF SOUTH SUDAN (UNMISS)

— The UN has lauded efforts by Indian peacekeepers in South Sudan in re-opening a critical supply route impacted by floods last year, emphasising the “vital role” it played in supporting stability and enabling assistance to vulnerable civilians.

— The UNMISS was established following a UN Security Council resolution in July 2011 to consolidate peace and security and to help establish conditions for development in then newly born South Sudan.

— As of January 2026, India is the top troop contributing country to the UNMISS with 1,779 personnel.

— Sudan was among the earliest African countries to gain independence from colonial rule. It participated in the landmark Bandung Conference in 1955 (of 29 Asian and African nations, including India), and was Africa’s largest country till South Sudan broke away in 2011.

BAB EL-MANDAB

— The Iran-backed Yemeni Houthis have now entered the Middle East war. It controls the Yemeni capital of Sanaa, which is located close to the Bab el-Mandab in the Red Sea — a key reason for rise in concerns for this strait.

— The Bab el-Mandab, also known as the “Gate of Tears” in Arabic, lies at the southern tip of the Red Sea, between Yemen and the Horn of Africa.

— It connects the Red Sea to the Gulf of Aden and further to the Indian Ocean. It accounts for roughly 10 to 12 per cent of global oil and natural gas shipments.

— What makes this passage even more important is its link to the Suez Canal, a critical waterway that connects it to the Mediterranean Sea, as well as the SUMED pipeline.

— This strategic chokepoint plays a key role in the transport of petroleum and natural gas from the Persian Gulf, especially for shipments that pass through the Suez Canal via the Bab el-Mandab.



— Nearly 80 per cent of India’s merchandise trade with Europe moves through this corridor. The European Union alone accounts for more than 15 per cent of India’s total goods exports, which are valued at roughly \$450 billion each year.

DENIS MANTUROV

- Russia’s First Deputy Prime Minister Denis Manturov visited India on 2nd- 3rd April, 2026.
- The Russian First Deputy PM’s visit to New Delhi comes days after India cleared procurement of a fresh batch of five S-400 missile systems from Russia.

MIN AUNG HLAING

- Myanmar’s junta chief, Min Aung Hlaing, was elected the President on 3rd April after a parliamentary vote, formalising his rule as a civilian leader. He had been the military chief since 2011.
- Hlaing toppled the Aung San Suu Kyi government in 2021, which triggered nationwide protests. Following a campaign of repression, the country plunged into ethnic armed resistance.
- In 2024, the International Criminal Court sought an arrest warrant for Min Aung Hlaing over the alleged persecution of the minority Muslim Rohingya. More than a million of this ethnic minority group reportedly fled from Rakhine State to neighbouring Bangladesh and India to escape a military crackdown in 2017.

RBI BARS BANKS FROM NON-DELIVERABLE DERIVATIVE (NDD) CONTRACTS IN THE RUPEE

- In the latest directive, the Reserve Bank of India (RBI) has barred banks from non-deliverable derivative (NDD) contracts in the rupee, marking a decisive shift toward tighter control and transparency in the foreign exchange market.
- NDDs, which are typically traded outside India in financial hubs like Singapore, Hong Kong, London or Dubai, allow participants to bet on the rupee’s direction without actual delivery of the currency.
- An NDD is a derivative contract where two parties agree on a future exchange rate for the rupee, but settle the difference in cash, usually in US dollars.
- The NDD market is widely used by foreign investors, hedge funds and global banks who cannot freely access and play in the Indian rupee market, as well as by firms looking to hedge currency risk. These trades take place offshore, outside the control of the RBI.
- The NDD market was also misused by some market participants. Previously, some participants would cancel and re-enter contracts to take advantage of favourable movements, effectively turning hedging tools into speculative instruments.



FOREIGN AND INTERNATIONAL MONETARY AUTHORITIES (FIMA) REPO FACILITY

- Former deputy Governor of the Indian Central Bank has suggested that with the rupee falling rapidly and the country's foreign exchange reserves being depleted, the Reserve Bank of India (RBI) should lean on a US Federal Reserve facility to ensure US dollars are "flushed continuously in and out of the market".
- Under the Foreign and International Monetary Authorities (FIMA) Repo Facility, central banks and other foreign monetary authorities such as the RBI can place their holdings of US Treasuries with the Federal Reserve's System Open Market Account.
- They agree to buy them back at the maturity of the repurchase agreement. The term of the agreement is overnight or seven calendar days.
- Since the transactions take place exclusively in dollars, there is no exchange rate risk. Through this an alternative temporary source of U.S. dollars is provided to the approved FIMA account holders of Treasury securities.

AVIATION TURBINE FUEL (ATF) OR JET FUEL

- To cushion Indian flyers, jet fuel prices for domestic flights were hiked only partially; however, the price for international flights have more than doubled.
- According to IOCL, Jet fuel is a colourless, combustible, straight-run petroleum distillate, kerosene-based fuel. Its principal uses are as jet engine fuel which is the most common jet fuel worldwide, classified as JET A-1.
- ATF prices in India were deregulated in 2001 and are revised on a monthly basis based on a formula of international benchmarks.

KAVACH

- The Ministry of Railways has commissioned Kavach, an indigenously developed Automatic Train Protection (ATP) system on the Vadodara-Nagda section of Delhi-Mumbai route.
- The Kavach makes rail operation safer by applying brakes in trains in critical situations. The system automatically protects against Signal Passing at Danger (SPAD), Head-on and rear-ends collision risks.
- Moreover, Overspeeding is continuously monitored and controlled and Safety is ensured even in low visibility and adverse weather conditions.
- This technology features an electronic device linked with radio frequency identification systems positioned at stations, trains and tracks. If a loco pilot inadvertently skips a red signal, Kavach automatically activates and controls the train's braking systems.
- Additionally, the system detects any trains approaching the same tracks, taking necessary actions to avert collisions and alerting the loco pilot.



— It complies with Safety Integrity Level (SIL-4) safety standards, the highest level of safety integrity globally. Being an indigenously designed and cost-effective system, it reduces dependence on imported technologies and promotes Indian signaling industry.

JAWAI LEOPARD RESERVE

— The Rajasthan High Court has prohibited night safaris, the use of drones and some other activities in the Jawai Leopard Reserve in Rajasthan's western Pali district.

— There are nine species of leopards, which are found in both Asia and Africa. The leopard (*Panthera Pardus*), the smallest of the big cats, is well known for its ability to adapt to a variety of settings. This species is a nocturnal mammal, they can hunt at night.

— The "Status of Leopards in India, 2022" report states that there were 13784 leopards in India in 2022 compared to 12,852 in 2018.

GANGETIC SOFTSHELL TURTLES

— During a routine check in Jharcha, Greater Noida, Police spotted a man on a scooter, carrying a rather heavy jute bag that appeared to be moving. The team stopped the man, asked him to open the bag, and found 16 turtles inside.

— These were Indian Softshell or Gangetic Softshell Turtles, which fall under Schedule I of the Wildlife Protection Act, 1972 — the most protected category under Indian wildlife law.

— It is classified as Endangered under the IUCN Red List of Threatened Species.

MIHIR BHOJ

— Samajwadi Party (SP) chief Akhilesh Yadav kicked off his 2027 election campaign in Uttar Pradesh from the Mihir Bhoj degree college, located near the statue of the 9th-century ruler Mihir Bhoj in Dadri.

— Mihir Bhoj, a 9th-century ruler of the Gurjara-Pratihara dynasty, succeeded Ramabhadra in early medieval north India. He is known for his devotion to Lord Vishnu, and his empire is believed to have spanned from the Himalayas to the Narmada River, and from the Sutlej River to Bengal.

— Significantly, Kannauj, located in present-day Uttar Pradesh, was once the capital of his empire.



BUSINESS & ECONOMICS

ORDERLY EXIT

Global energy shocks are not new. The world has seen them before — in the early 1970s after the Yom Kippur War; in 1979 following the Iranian Revolution; in 1990-91 after Iraq's invasion of Kuwait, and in 2022 after Russia's invasion of Ukraine. Yet, the present crisis triggered by American-Israeli strikes on Iran is materially different. While Russia's war with Ukraine sharpened the geopolitical use of natural gas, the current conflict has simultaneously disrupted oil and gas flows. This disruption comes at a moment of profound transition in the global energy system. The International Energy Agency has underlined that transport electrification is firmly underway, with electric vehicles displacing about 0.9 million barrels per day (mb/d) of oil demand in 2023, rising over 30% to about 1.3 mb/d in 2024. This still amounts to barely 1%-1.3% of global oil demand, but it signals a structural shift. A supply shock of roughly 8 mb/d could accelerate the transition away from fossil fuels.

The energy transition could also unsettle the dollar's long-standing dominance in global energy trade. The "petrodollar" system, forged in the aftermath of the 1970s oil shocks through U.S.-Gulf strategic alignment, ensured that oil was priced in dollars and that surplus revenues were recycled into U.S. financial markets. This underpinned both the financialisation of oil and America's capacity to sustain large fiscal deficits. The emerging paradigm is more fragmented, with energy shifting from a globally traded commodity to geographically dispersed supply chains centred on critical minerals. Lithium reserves are concentrated in Chile (30%), Argentina (13%) and Australia (20%+). The Democratic Republic of Congo accounts for over 70% of global cobalt production, while Indonesia dominates the nickel market. Copper, crucial for electrification, is likewise concentrated in Chile and Peru. Canada is emerging as a key supplier of nickel, cobalt, and lithium, while Australia leads lithium production for western supply chains. Yet, the decisive advantage lies in processing and manufacturing, where China is dominant. This raises the possibility that a future energy system could be as dependent on Chinese industrial capacity — and potentially the yuan — as the old system was on dollar-denominated oil. For countries such as India, this presents a dilemma. The transition offers an opportunity to reduce fossil fuel dependence, but also risks creating new technological and supply chain dependencies. Navigating this landscape will require a conscious strategy rooted in the Global South's legacy of non-alignment — securing resources, building domestic technological capabilities in manufacturing and processing, and avoiding a new form of dependence that merely shifts old hierarchies.

WHY INDIA IS OPPOSING CHINA-LED WTO DEAL, DESPITE ISOLATION RISK

The rapid expansion of support for the China-backed Investment Facilitation for Development (IFD) Agreement at the World Trade Organisation (WTO) has left India at risk of political isolation ahead of a key global meeting next week.

Key Takeaways:

- Set to be held in the Central African nation of Cameroon, the 14th Ministerial Conference begins on March 26. It will include a request to incorporate the IFD Agreement into the Marrakesh Agreement, which led to the WTO's formation in 1995.



- Since it was first discussed in 2017, support for the agreement has grown from 70 countries to 128 (out of 166 WTO members) as of last year. India and South Africa are among its few opponents, even drawing criticism from smaller countries facing an investment crunch. It also comes at a time when the widespread tariffs imposed under the Trump administration have raised questions about the WTO's purpose.

- WTO Director-General Ngozi Okonjo-Iweala has backed the IFD, stating that it could enhance the transparency of investment frameworks, cut red tape, and promote responsible business conduct. "By lowering costs associated with investment flows, the IFD Agreement can help developing and LDC members attract and retain more investment... to access new technologies, diversify their economies, and create better jobs," she said during a high-level dialogue on September 16.

- Indian officials have said this is the longest-pending issue at the WTO, and a permanent solution would give India and a coalition of developing countries the flexibility to give higher farm support to their people. It could negotiate for a solution on the public stockholding issue in exchange for a softening of its position on the IFD agreement.

Do You Know:

- On the face of it, the agreement aims to improve the investment climate and promote international cooperation to facilitate the flow of foreign direct investment among WTO members. In particular, it focuses on developing and Least-Developed Countries (LDCs) and fostering sustainable development. It focuses on Foreign Direct Investment (FDI).

- A WTO factsheet says that in today's integrated economy, expanding investment flows, like trade flows, depend on "simplifying, speeding up and coordinating processes, not primarily on liberalising policies." By aligning facilitation policies with global benchmarks, investment facilitation measures can help economies attract and expand investment, helping to diversify and expand their production capacities and exports, it added.

- India has argued that incorporating the IFD through a plurilateral route raises broader questions about the WTO's future, which is traditionally based on multilateralism and consensus.

- The New Delhi-based think tank Research and Information System for Developing Countries (RIS) released a report on Saturday (March 21), stating that the IFD has additional strategic considerations for India. The World Trade and Development report said that its significant feature is its overlap with Chinese connectivity and infrastructure initiatives.

- International trade experts have said that India's position could also be tactical, in relation to its demand for a permanent solution to the issue of its public stockholding of food grains.

- Essentially, some countries (including the US and Thailand) argue that the heavily subsidised foodgrains India provides to around 80 crore Indians under the Pradhan Mantri Garib Kalyan Anna Yojana (PMGKAY) distort global trade.

- Under WTO norms, agricultural subsidies should not exceed 10% of the value of agricultural production, but developing nations receive certain protections. India's rice subsidies still exceeded the threshold on multiple occasions, forcing it to invoke the 'peace clause' agreed to in the 2013 Bali ministerial, which allows developing countries to breach the ceiling without invoking legal action.



WHAT IS PLURILATERALISM?

At the World Trade Organization's (WTO) fourteenth Ministerial Conference (MC14), India opposed the China-backed plurilateral Investment Facilitation for Development (IFD) Agreement.

Delhi's opposition was premised on the argument that the inclusion of the IFD through a plurilateral route could undermine the multilateral and consensus-based framework of the WTO. Notably, the WTO is a foundational institution of the multilateral, rule-based trading system established after the Second World War.

Against this backdrop, key questions arise: Does the turn towards plurilateral approaches signal a shift away from the post-war multilateral trading order? How does plurilateralism function?

Plurilateralism

Plurilateralism is largely seen as a strategy in international economic governance. Georgios Dimitropoulos and others view "plurilaterals as multiparty, sector-specific agreements nested within the frame of an international organisation or broader multilateral agreement by a subset of the overall membership."

For instance, plurilateral deals within the framework of the WTO are fundamentally designed to bind only those member countries that choose to participate in them. In contrast, multilateral agreements are binding on all 166 member nations of the WTO.

In the years following WWII, the General Agreement on Tariffs and Trade (GATT) was signed by 23 nations in 1947 to establish a rules-based world trading system. It sought to promote free trade and economic growth, reduce protectionism, and offer a platform for countries to negotiate trade agreements and resolve disputes.

Over time, the GATT evolved into the WTO in 1995. Although scholars differ on precise principles underpinning the GATT and WTO, Richard Baldwin, a Professor of International Economics, outlines one general and five specific principles.

The general principle says that "the world trade system should be rules-based, not results-based", which is implemented with five specific principles:

1. Nondiscrimination
2. Transparency
3. Reciprocity
4. Flexibility
5. Consensus decision-making

However, this rules-based system, premised on consensus, has been under stress due to various developments in global trade.

Fragmentation of global trading system and developing economies

Although several reasons contributed to the logjam at the WTO, the failure of the Doha Round launched in 2001 is a turning point in the crisis in the multilateral trade organisation. The Doha



Round attempted to achieve major reform of the international trading system through the introduction of lower trade barriers and revised trade rules.

But its failure is seen as paving the way for plurilateral arrangements, with like-minded countries resorting to such arrangements to advance trade liberalisation. The approach gained further momentum in 2017 when the US blocked the appointment of judges to the WTO's dispute settlement body – a key pillar of the rules-based trading system.

The ongoing geopolitical tensions, US President Donald Trump's tariff policies, and growing protectionism are seen as other factors contributing to undermining this system. The proliferation of Regional Free Trade Agreements (RFTAs) is an example, whereby preferential trade agreements between two or more members are established.

But RFTAs are seen as undermining the WTO's core principle of non-discrimination among members, which, in turn, contributes to the fragmentation of the global trading system. This has raised concerns among developing countries like India about the growing fragmentation and the potential marginalisation of developing economies.

US ANNOUNCES 100% TARIFF ON PATENTED PHARMA; LIMITED IMPACT ON INDIA

THE US on Thursday announced a 100% tariff on import of patented pharmaceuticals and associated ingredients starting July 31 on grounds that Washington is heavily reliant on imports, which threatens to limit access to life-saving medications in the event of "global supply chain disruption".

Key Takeaways:

— US President Donald Trump said that new tariffs will not include generic drugs "at this time". But a decision on adjusting imports of generic pharmaceuticals and their associated ingredients could be taken within one year. India is primarily an exporter of generic pharma products, but has introduced various schemes to boost production of patented drugs too.

— The US is India's largest market for pharmaceutical exports, accounting for an almost 40% share. Pharma exports were also exempt from the 50% tariffs imposed by the Trump administration on most Indian goods.

— While India's exports are primarily in the patented segment, Sun Pharma is the only Indian company with sizable sales from patented products in the US. According to HSBC analysts, it reported global sales of \$1,217 million from patented products in FY25, of which the US market accounted for 85-90%.

— The PLI Scheme for Pharmaceuticals was approved by the Union Cabinet in 2021, with a financial outlay of Rs 15,000 crore and a production tenure running from FY 2022-23 to FY 2027-28.

— Former trade officer and founder of think tank Global Trade Research Initiative, Ajay Srivastava, said that for India, the immediate impact is limited as around 90% of India's pharmaceutical exports to the US are generics, which remain exempt.

— Trade experts said the US could use tariffs mainly as a pressure tool, not to raise revenue but to push drugmakers to cut prices in the US, shift some manufacturing locally, and to gain greater



control over critical pharmaceutical supply chains, treating the sector as strategically important like semiconductors.

Do You Know:

— Intellectual property right (IPR) is the right given to persons over the creations of their minds: inventions, literary and artistic works, and symbols, names and images used in commerce. They usually give the creator an exclusive right over the use of his/her creation for a certain period of time.

— A patent is an exclusive right granted for an invention, and under Patents Act 1970, a “patent is granted for any invention”. A patentee under the Act is defined as the person whose name is entered on the register of patents as the “grantee or proprietor of the patent”.

FEAR OF THE FOREIGN

The Centre wants to restrict foreign contributions to individuals and organisations in India, but intends to do so in a selective and opaque manner. A fresh set of amendments to the Foreign Contribution (Regulation) Act, or FCRA, now temporarily stalled due to protests, is an attempt by the Centre to empower itself to arbitrarily take control of assets owned by recipients of foreign contributions. Introduced in the Lok Sabha on March 25, 2026, the Bill to amend the FCRA proposes a comprehensive statutory framework for a new “designated authority” to seize, manage, and dispose of assets of organisations that lose their FCRA licence. Cloaked in the rhetoric of national security and foreign interventions, the move smacks of bad faith, or even worse, a devious scheme to snatch assets built through legal means. Once an FCRA registration ceases to exist, the designated authority can take control of assets built using foreign funds — schools, hospitals, places of worship — and use them. This process is proposed to be automatic and instantaneous upon the discontinuation of the FCRA status, requiring no judicial determination or adjudicatory process. In effect, the Centre that grants FCRA permission can decide to withdraw that permission, and benefit from its own decision. This is unfair in both principle and procedure, and Christian groups that run numerous health and educational institutions are particularly concerned, given that they may have received contributions from abroad

The Bill has been postponed for now, but the government has no plans to abandon it. The FCRA was first enacted in 1976, and reenacted in 2010 during the UPA regime and amended in 2020 under Narendra Modi — progressively tightening the receipt and use of foreign funds. It is notable that state policy seeks foreign money in a range of domains — from infrastructure to technology, and entertainment to real estate. Regulatory regimes can be credible only when they are transparent and even-handed. That is not the case with the FCRA restrictions. Rajya Sabha MP John Brittas said his parliamentary questions regarding FCRA cancellations, non-renewals, and related data had been disallowed since 2024. That leaves one with the reasonable assumption that the government allows only some to receive foreign funds. That built-in favouritism apart, the design of the proposed legislation violates the principles of natural justice. The assets built legally with foreign funds before an organisation loses its FCRA clearance cannot justly be subject to seizure under any subsequent regulatory action. The Centre must rethink its approach on this issue and ensure that any regulations on foreign funds it introduces are fair, transparent, and steer clear of what exists on the ground.



CPI WITH NEW BASE YEAR

The Ministry of Statistics and Programme Implementation (MoSPI) released the new Consumer Price Index (CPI) data based on the updated base year 2024, placing retail inflation in January at 2.75%. The modernisation of CPI inflation, India's most important macroeconomic indicator, is part of a larger overhaul of India's official statistics by MoSPI.

Core Concept

— Inflation refers to the rate at which the general price level for goods and services increases over a period of time, causing a decrease in purchasing power of money or real income. There are different methods for measuring inflation such as Consumer Price Index, Wholesale Price Index (WPI), GDP deflator, and more, with each focusing on a specific aspect of price changes.

— Consumer Price Index (CPI) Inflation relates to consumer prices of all goods purchased by the consumer, which may be either domestically produced or imported.

— CPI inflation is the most important economic indicator in the country as it directly influences the level of interest rates set by the Reserve Bank of India (RBI). The central bank has a legal mandate to target a CPI inflation rate of 4% in the medium term within a tolerance band of 2-6%.

The formula for calculating inflation is $((CPI_{x+1} - CPI_x) / CPI_x) * 100$.

CPI x = the value of the CPI in the initial/base year x.

— The newest CPI inflation comes after years of work by the statistics ministry to update the base year for prices of the CPI to 2024 from 2012, reconstitute the consumption basket based on the results of the 2023-24 Household Consumption Expenditure Survey (HCES), so that prices are measured as per the latest consumption patterns and not the 2011-12 survey.

— The new CPI with the changed "base year" of 2024, which means that the price index is given a value of 100 for 2024 and changes from these price levels are then calculated to arrive at inflation rates for each good or service.

— The new CPI basket contains 358 goods and services, up from 299 in the erstwhile basket. This new CPI has included rural house rent for the first time to improve coverage of rural housing consumption.

— The CPI 2024 series adopts the Classification of Individual Consumption According to Purpose (COICOP) 2018, replacing the earlier structure comprising six broad groups. These were the six broad groups—Food and beverages, Pan, tobacco and intoxicants, Clothing and footwear, Housing, Fuel and light and Miscellaneous (services such as education, health care etc.).

— CPI 2024 uses the latest classification system developed by the United Nations Statistics Division. According to the MoSPI, "under the revised framework, expenditure is classified into 12 divisions at the first level, 43 groups, 92 classes, 162 subclasses, enabling and 358 items at the last level of hierarchy.

CPI vs WPI and GDP Deflator

— Wholesale Price Index (WPI): While the CPI measures the price changes in the retail market (maximum retail prices{MRP}, inclusive of taxes), the WPI measures the price changes in the



wholesale market. Say, for example, the price of a commodity (such as onions) would vary depending on the fact that it is bought from the wholesale market or retail market.

— GDP deflator: The GDP deflator (also called implicit price deflator) is the ratio of the value of goods and services an economy produces in a particular year at current prices to that at prices prevailing during any other reference (base) year.

$$\text{GDP Deflator} = ((\text{Nominal GDP}/\text{real GDP}))*100.$$

RBI'S NEW FOREIGN EXCHANGE CAP TO STEM RUPEE SLIDE. BUT WHY ARE BANKS WORRIED?

Concerned about the falling value of the rupee amid the rise in oil prices and fears over inflation in the wake of the West Asia conflict, the Reserve Bank of India last week instructed banks to limit their net open exposure to the currency in the foreign exchange market to \$100 million by the end of each day. Authorised dealers must comply with this rule by April 10.

Key Takeaways:

- The RBI's goal in taking this step is to stabilise the falling rupee and protect the country's foreign exchange reserves, which have fallen since the West Asian conflict started a month ago.
- The central bank introduced this cap as the Indian rupee has recently hit historic lows of 94.81 against the dollar, showing a fall of four per cent since the war started in late February. The RBI's measure is aimed at halting the rupee's decline by limiting how much foreign currency exposure banks can maintain onshore.
- Further, as the pressure on the currency built up, the RBI has used the dollar in its forex kitty to stabilise the rupee. As a result, forex reserves of the country have fallen by over \$30 billion to \$698.34 billion since the conflict started. "The (RBI) move signals heightened concern around currency volatility and reflects the central bank's attempt to stabilise excessive fluctuations.
- The heavy foreign investor outflows have pulled the rupee down sharply, which has broken past the 92-, 93-, and now 94-per-dollar levels just this month. The Indian currency had weakened below 90- and 91-per-dollar back in December 2025, and is now precariously close to the 95-per-dollar mark.

Do You Know:

- Bankers are increasingly uneasy about the proposed regulatory changes, as these could have immediate financial and operational consequences. One of their primary concerns is the speed of implementation. Banks have urged the RBI to allow a transition window of about three months, giving them sufficient time to gradually reduce or restructure their existing foreign exchange positions. An abrupt enforcement would leave little room to manage risk effectively and lead to losses, said an analyst, tracking the development.
- The scale of current exposure adds to the anxiety. Individual banks are estimated to hold sizable dollar positions making the system-wide exposure quite substantial. If the new limits are enforced without delay, banks may be compelled to rapidly unwind these positions, potentially leading to total dollar sales in the range of \$11–15 billion across the sector, according to market estimates.



- Banks may incur mark-to-market losses if they are forced to exit positions at unfavourable exchange rates. These losses would be reflected in their treasury books for the ongoing March quarter, thereby putting pressure on overall profitability and earnings.
- If the rupee slide continues, the RBI is likely to announce more measures to stabilise the rupee and forex reserves, market observers say. During the global financial crisis and taper tantrum (reduction in economic stimulus), then RBI Governor Raghuram Rajan responded to pressure on the rupee by attracting foreign currency inflows, notably through the FCNR(B) scheme with subsidized swap rates that brought in over \$30 billion and boosted reserves.

FOREX RESERVES

Due to ongoing West Asian conflict India is facing pressure on the rupee and foreign exchange reserves. Last week, the Reserve Bank of India (RBI) said India's foreign exchange reserves "remain adequate to provide cushion against external shocks". Thus, it becomes important to know the forex reserves.

Core Concept

— Foreign exchange reserves are an important component of the Balance of Payment (BoP) and an essential element in the analysis of an economy's external position. In times of crisis, adequate foreign exchange reserves give comfort, acting as a buffer and giving strength to a country's macroeconomic fundamentals.

— The RBI has the primary responsibility of collection, compilation and dissemination of data relating to foreign exchange reserves.

— India's foreign exchange reserves comprise foreign currency assets (FCA), gold, special drawing rights (SDRs) and reserve tranche position (RTP) in the International Monetary Fund (IMF).

— Foreign exchange reserves are accumulated when there is absorption of the excess foreign exchange flows by the RBI through intervention in the foreign exchange market, aid receipts, interest receipts, and funding from the International Bank for Reconstruction and Development (IBRD), Asian Development Bank (ADB), International Development Association (IDA), etc.

— Special Drawing Rights: SDRs are international foreign exchange reserve assets. Allocated to nations by the IMF, a SDR represents a claim to foreign currencies for which it may be exchanged in times of need. SDRs are the IMF's unit of account. 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.

— Reserve Tranche Position: The primary means of financing the IMF is through members' quotas. Each member of the IMF is assigned a quota, part of which is payable in SDRs or specified usable currencies ("reserve assets"), and part in the member's own currency. The difference between a member's quota and the IMF's holdings of its currency is a country's RTP. India's reserve position is worth \$4.8 billion.



RBI WEIGHS E-CHEQUES TO MODERNISE PAYMENT SYSTEM

In an effort to modernise India's payment ecosystem, the Reserve Bank of India has proposed the introduction of electronic cheques (e-cheques).

Key Takeaways:

— This initiative aims to merge the trusted, well-established features of traditional paper cheques with the efficiency, speed and security of digital payment systems, while also catering to evolving business and consumer needs.

— In its report on payment system, the central bank said a comprehensive review of the design and security features of cheques will be undertaken to enhance uniformity, strengthen fraud prevention and ensure alignment with emerging processes.

— The review will identify and adopt best practices, making them applicable across all cheque instruments, the RBI said in its Payments Vision 2028 report.

— An e-cheque is a digital version of a paper cheque created and sent online instead of on paper. The payer fills in the details, signs it securely using a digital method, and sends it to the payee or bank.

— The bank verifies and processes it like a normal cheque, but it is faster, more secure, paperless and easy to track.

— "Cheques as a payment instrument offer some unique benefits over other payment methods," it said. Building on the existing CTS-2010 standards (which were introduced in 2010), banks have independently implemented additional security features, leading to variations across the system, the RBI's payment system report said. On cross-border payments, the RBI paper said a review of the cross-border payments framework will be conducted to enhance efficiency, and it will be complemented by publishing dedicated reports on specific aspects.

— Further, for promoting ease of doing business and convenience, the regulatory process for cross-border payment authorisation under the PSS Act, 2007 and FEMA, 1999 will be streamlined along with examining the case for recognising Small Payment System Providers under a perpetual regulatory sandbox structure. Providing flexibility to customers to switch among payment service providers seamlessly through implementation of a Payments Switching Service (PaSS) will be examined, the report said.

— Further, to promote systemic stability and integrity, entities deemed to be playing a critical role in facilitating digital payments shall be brought within the regulatory fold.

Do You Know:

— Cheque Truncation System" (CTS) is an online image-based cheque clearing system where cheque images and Magnetic Ink Character Recognition (MICR) data are captured at the collecting bank branch and transmitted electronically eliminating the actual cheque movement.

— CTS is protected by a comprehensive PKI-based security architecture which incorporates basic security and authentication controls such as dual access control, user ID and passwords with cryptobox and smart card interfaces.



FRESH IBC AMENDMENTS: HOW GOVT LOOKS TO PLUG GAPS IN INSOLVENCY CODE

The Parliament on Wednesday passed the Insolvency and Bankruptcy Code (Amendment) Bill, 2026. The IBC was enacted in 2016 to create a time-bound mechanism to deal with companies that default on their loans — by reviving them through resolution or liquidating them if resolution is not possible.

Key Takeaways:

- The amendment seeks to speed up the resolution process and introduces provisions for an out-of-court mechanism, group insolvency and cross-border insolvency.
- Before this amendment, the IBC had already been amended six times to address the pressing issues of the time and incorporate the needs of the stakeholders.
- Over the years, the IBC has improved discipline among borrowers and lenders but has also faced criticism over delays, backlog of cases and low recovery rates for banks.
- According to the existing code, the National Company Law Tribunal (NCLT), which oversees the corporate insolvency resolution process, has 14 days to decide on admitting an insolvency application.
- But it often takes months to initiate insolvency proceedings. The amendment attempts to streamline this hurdle at the very first stage.
- The NCLT must now admit applications once the default is proven. There are no other conditions except ensuring that the resolution professional faces no disciplinary proceedings and procedural requirements are met. The Bill makes it clear that an application cannot be rejected on any other ground.
- Another major change in the IBC framework is the introduction of the Creditor-initiated Insolvency Resolution Process (CIIRP). This provides for an out-of-court initiation mechanism which can be done by only “specified financial creditors”. At least 51% of financial creditors will have to agree to initiate this process.
- The Bill also introduces a framework for group insolvency and cross-border insolvency, aimed at improving investor confidence and aligning domestic processes with international best practices.
- The committee called for replacing criminal penalties with civil penalties for offences such as contravention of moratorium or resolution plan and non-disclosure of dispute or payment of debt by operational creditor. Its reasoning was that non-implementation or delayed implementation of resolution plans may not always be attributable to malafide intent.

WHY IS INDIA PUSHING PIPED GAS NOW?

The story so far:

India has a total of 33 crore LPG connections. Recently, Anjan Kumar Mishra, Secretary at the Petroleum and Natural Gas Regulatory Board, said that domestic natural gas production alone could cater to 30 crore connections if all were to switch to piped natural gas (PNG).



What is the difference between LPG, LNG, PNG, and CNG?

LPG is a co-product of oil refining and natural gas processing. That is, its production depends on the processing of both crude oil and natural gas.

Liquefied Natural Gas (LNG), as the name suggests, is natural gas that has been cooled to below – 160 degrees Celsius to turn it into a liquid for shipping. Liquefaction reduces its volume by 1,000 times.

Compressed Natural Gas (CNG) is primarily used as a vehicular fuel. It involves compressing natural gas to a pressure of 200-250 kg/cm² (g) to reduce its volume and enable efficient distribution.

How are LPG and natural gas transported to the user?

Propane and butane gases are mixed, pressurised, and cooled to below 40 degrees Celsius, and then transported from the source to consuming countries via ships. LPG is bottled in cylinders and physically delivered to customers.

Piped natural gas is transported through pipelines. Before this, imported natural gas is liquefied and transported through LNG carriers. “LNG carriers use special cargo tanks and insulation systems designed for ultra-low temperatures,” stated Mitsui O.S.K. Lines to The Hindu. “Put simply, the basic task is to move a very cold liquid onto the ship while preventing it from warming up too much.”

At the destination, LNG is regasified and transported to the final consumer through pipes.

Last-mile delivery of LPG is easier through cylinders that are transported through trucks and tricycles than building an extensive pipeline network covering every household for natural gas. This has been a key reason why India adopted LPG for domestic cooking.

Why the push for piped gas against LPG now?

India’s dependence on LPG imports is currently higher. For instance, in natural gas, India’s one-year import was about 27 million tonnes of LNG last year, and production was roughly the same, according to government data. On the other hand, India — until recently — imported three-fifths of its LPG requirements, of which 90% was routed through the Strait of Hormuz, which has now been blocked due to the war in West Asia. Typical annual LPG consumption is 34 million tonnes, out of which 12 million tonnes are produced in India.

If gas is to be imported, LNG has many more sources across the world. In LPG, India was largely reliant on Saudi Arabia and Qatar and the supplies had to pass through the Strait to reach India. “Globally large capacities of liquefaction plants for natural gas are coming online over the next few years, so availability should be healthy,” said Prashant Vasisht, Senior Vice President of ICRA.

Can natural gas replace LPG straight?

Natural gas is much lighter than LPG. But one kilogram of natural gas can deliver more energy than one kilogram of LPG. For cooking purposes, these differences are not significant, making PNG a drop-in replacement for LPG.

However, in industrial uses, the equipment may need to be tuned to a different setting or even altered. For instance, LPG is widely used by MSMEs for welding and cutting. Reports from the



ground indicate that while the government is encouraging industrial users to switch, a lack of awareness and technical know-how may hamper adoption.

How is the government pushing for natural gas?

On March 26, The Hindu learnt from senior government officials that over the next two weeks, India could add another 15 lakh new PNG connections.

The official said that instituting last-mile connectivity amidst unfavourable city infrastructure in certain areas was among the major hurdles in expanding the piped gas network.

To speed it up, in a gazette notification, the Centre instituted provisions to help accelerate the uptake, which, among other things, included specific timelines for approving pipeline expansion in housing and non-housing areas.

The Ministry of Petroleum and Natural Gas (MoPNG) told the Parliamentary Standing Committee, which is assessing its demand for grants for FY 2026-27, that it is targeting to have in place a pipeline network that would cover 12 crore PNG connections by 2034.

The committee, in an earlier report, had asked the Ministry to help City Gas Distribution (CGD) entities to overcome difficulties in pursuing expansion, such as in obtaining permissions, land, bidding criteria, and NOC requirements from local authorities.

Across towns and cities, such as in Maharashtra or Coimbatore in Tamil Nadu, where the GAIL pipeline runs close, the government is now pushing for piping infrastructure for local distribution.

As of December, the government announced that India's gas pipeline network spans about 25,000 kilometres, with an additional 10,500 kilometres under construction. The government is also ensuring that PNG pricing remains competitive with LPG.

"PNG connections have now crossed 1.5 crore. A recent government gazette notification reinforces this direction, mandating that households cannot hold both LPG and PNG connections. As a result, roughly 6 million households will be required to surrender their LPG connection and transition fully to PNG within a three-month timeframe. This will bring total household PNG connections to 2 crore soon," said Manish Sejwal, Senior Vice President at Rystad Energy. "Since the 2020-21, the compounded annual growth rate in connections has been some 18%. A CAGR of 24% would be needed to reach 12 crore connections by 2034-35," he added.

What are the challenges?

The GAIL pipeline network is currently concentrated in western and northern India, with some coverage in Kerala and Bengaluru. The 10,000-kilometre-plus pipelines under construction cover tier-2 and tier-3 cities in parts of central and eastern India, as well as some parts of Tamil Nadu connecting to the Bengaluru leg, and one section going to the northeast. However, large regions in central, southern, and northeastern India remain uncovered. Further, the alignment of the gas pipeline network is more intended to serve industrial needs than households.

The government has aggressively given CGD licences that would cover more than 300 geographical areas covering households, small industries, hotels and restaurants. As of now, some 90 of them are still not connected to the main trunk pipeline. Last-mile connectivity remains an immediate challenge.



Even if projections of 12 crore PNG connections are met in another 10 years, LPG connections will still be more than 20 crore, leaving India requiring to import significant amounts of LPG.

A little less than 30% of natural gas use goes into making fertilizers, while power plants account for 13% and city gas distribution around 20%, said ICRA's Mr. Vasisht. Some 35% goes to sectors like refineries and industries.

A major diversion from these sectors such as power may be needed to cater to cooking gas demand. Mr. Vasisht said industrial consumers can switch to naphtha and furnace oil.

PNGRB secretary Mr. Mishra had said that as of now some 1.2 crore PNG connections consume three million metric standard cubic metres of gas every day.

To supply 13 crore connections, India will have to increase domestic production by at least one-third.

Industry observers say that an increase in domestic production from Oil and Natural Gas Corporation (ONGC) fields is possible. Rystad Energy projects a 25% increase.

For instance, ONGC commenced production in the KG-DWN 98/2 Block in the KG basin in 2024. Peak production of the field is expected to be over 10 million metric standard cubic metres per day of gas, which would mean increasing today's overall gas production in India by 10%. Site officials expect the 98/2 block to increase ONGC gas output by 15% through more wells. Increasing imports through LNG may well be required if natural gas consumption is ramped up. India has some nine import terminals covering both coasts.

It will have to truly ramp up the pipeline network to leverage the imports. Further, India's LNG system is even more of a just-in-time system than LPG, with little long-term storage, unlike in Europe. Any disruption in imports will have an immediate impact on availability.

CENTRE MAY ADD BATTERY STORAGE UNDER REVAMPED PM-KUSUM 2.0

The centre is considering incorporating a new provision for battery energy storage in the revamped Pradhan Mantri Kisan Urja Suraksha evam Utthaan Mahabhiyaan (PM KUSUM) scheme, as it works on formulating a new version of the flagship programme.

Key Takeaways:

- Launched in 2019, the current PM-KUSUM scheme is set to expire this month, prompting discussions within the government on rolling out an updated version, likely to be called PM-KUSUM 2.0.
- While the current scheme focuses on solarisation of agricultural pumps, it does not include battery storage. The addition is actively under consideration in order to address the growing challenge of mismatch between agricultural power demand and solar generation patterns.
- The proposed battery storage component is expected to bridge this gap by storing surplus solar power generated during peak hours and supplying it when demand persists but generation falls. Discussions on the design of the scheme are ongoing, with differing views between the Ministry of Power and the Ministry of New and Renewable Energy (MNRE) on the extent of storage to be provided. The Ministry of Power has suggested provisioning for up to four hours of battery storage, while MNRE has proposed a two-hour capacity.

**Do You Know:**

- The Centre has consistently positioned PM-KUSUM as a key pillar of its clean energy transition. The scheme, aimed at promoting solarisation in the agriculture sector, comprises three components: setting up of decentralised solar power plants (Component A), installing standalone solar pumps in off-grid areas (Component B), and solarising grid-connected agricultural pumps (Component C).
- As per the data provided by MNRE in the parliament, 839.4 MW of capacity has been installed under Component A. Under Component B, over 10 lakh standalone agricultural pumps have been installed. Under Component C, over 12,787 pumps have been solarised through IPS, while feeder-level solarisation has covered over 13 lakh pumps, with a total installed capacity of 6,636.9 MW.

UNEXPECTED SURGE

India's industrial growth held a positive surprise in February 2026, coming in at 5.2%, marginally faster than the growth in January. Apart from November and December last year, February's industrial performance — as measured by the Index of Industrial Production (IIP) — was the best in nearly two years. Why this was a surprise was because this performance diverges quite sharply from what was indicated by the Index of Eight Core Industries released earlier this month. The eight core sectors — crude oil, natural gas, refinery products, coal, fertilizers, steel, cement, and electricity — saw their combined growth slow to 2.3% in February, about half the growth rate in January. These core sectors have a weightage of about 40% in the IIP, and so the expectation was that they would drag the IIP down too. Yet, something else happened. This would imply that sectors outside the core ones did well. Most notably, the manufacturing sector in the IIP saw growth accelerate to a respectable 6% in February. The capital goods sector's growth accelerated to a 28-month high of 12.5%, on an already strong base of 8.1%. These are good signs for labour and capital. What is more concerning is that some elements of consumer demand are going in the opposite direction. Consumer durables grew 7.3%, but consumer non-durables contracted 0.6%, the second consecutive month of shrinkage. It had contracted in February last year as well, so this was not a statistical anomaly.

In general, spending on non-durables involves greater discretion on a day-to-day basis, and so is a better gauge of consumer sentiment. At the moment, at least this data suggest that sentiment is low. This also correlates with the new series of national accounts data showing that household expenditure has had a shrinking contribution to GDP. The government should also look into why the IIP and the Eight Core Industries index moved in opposite directions in February. The two are normally highly correlated, and so a divergence is immediately noteworthy. From the looks of things, February's strong IIP performance is likely to be a short-lived acceleration. The West Asia crisis is already having an impact on the economy. The monthly economic review by the Finance Ministry has said that early high-frequency economic indicators for March are pointing towards a "moderation in economic momentum". The longer the war persists, the sharper this "moderation" is likely to be. On a positive note, while what is being measured might turn dismal, how it is being measured will soon improve. The new, upgraded series of IIP data will be released in May. As the new GDP and CPI have done, the new IIP is sure to provide a clearer picture of the economy — the good and the bad.



TELANGANA'S GIG WORKERS LAW: THE LEGISLATION, AND HOW OTHER STATES HAVE FARED

On Monday, the Telangana state Assembly passed the Telangana Platform-Based Gig Workers (Registration, Social Security and Welfare) Bill, 2026. The legislation, which seeks to regulate gig and platform work and ensure protection of such gig workers, is similar to those passed by four other states: Karnataka, Rajasthan, Jharkhand, and Bihar. Here's what to know.

Key Takeaways:

— As per the Bill, platform companies will have to submit details regularly and file electronic returns of transactions made by customers every three months. The government will recover a 1-2% levy on these transactions. Strict penalties have been prescribed for non-compliance: Rs 50,000 for the first violation, Rs 1 lakh for the second, Rs 1.5 lakh for the third, and up to five times the arrears thereafter.

— A special welfare board will be constituted for gig workers using the corpus created by the government levy, which will provide for insurance, pension and maternity benefits. Every registered gig worker will be given a unique ID. A maximum of 5% of the fund can be used for the board's operating expenses.

— The Bill also mandates transparent policies: platforms must clearly disclose salary and deduction details, and there can be no arbitrary use of algorithms that affect workers.

— The Bill is expected to benefit over 4 lakhs of delivery riders, cab drivers, and other platform workers across the state. Venkataswamy said that the framework is to ensure that gig workers are not denied social security, insurance, and proper working conditions.

— The legislation for gig workers in all five states focus on registration of workers, providing social security, health insurance, and welfare benefits.

— Of the Bills passed by Rajasthan, Jharkhand, Bihar, and Karnataka, only Jharkhand has been able to implement it as the others are stuck in negotiations and discussions.

Do You Know:

— The gig economy, as defined by the World Economic Forum (WEF), involves the exchange of labour for money between individuals or companies via digital platforms that actively connect providers with customers on a short-term and payment-by-task basis.

— Rajasthan was the first state to pass the Rajasthan Platform-Based Gig Workers (Registration and Welfare) Act on July 24, 2023. The law mandates registration of gig workers, setting up of a welfare board, with one-third of its members to be women. It also levies a fee on aggregators for a welfare fund meant to provide, among other things, health insurance and accident coverage, and imposes penalties of up to Rs 5 lakh for a first offence and up to Rs 50 lakh for subsequent violations.

ON A WING

In a bid to revive the regional aviation sector, the Union Cabinet has signed off on a 'Modified UDAN' scheme with a sixfold higher outlay. The scheme had first been launched to expand aviation



to interior areas, using scheduled commuter airlines. Even then, industry analysts and experts had complained that UDAN did not make a viable business case for small regional airlines due to a lack of supporting infrastructure, low or unpredictable passenger demand, insufficient coverage of operating costs, and lack of awareness. In Modified UDAN, the subsidy period for tier-II and tier-III routes has been increased from three years to five years, an extension at least one of the small carriers had sought under UDAN before the COVID-19 pandemic hit. The exchequer will also fund the subsidies directly rather than having airlines levy an additional charge from passengers, with the government setting aside ₹10,043 crore over the next decade to this end. The government will also spend ₹12,159 crore to redevelop a hundred unused airstrips, ₹3,661 crore to build 200 helipads in remote areas, and purchase aircraft and helicopters for state carriers to boost last-mile connectivity to better match the mode of transport to actual demand and geography. The scheme will also pay for ongoing costs such as staffing and maintenance of low-traffic airports.

Regional aviation in India is structurally fragile and unlikely to become widely self-sustaining due to the unyieldingly high cost per passenger, price sensitivity, competition from rail and road transport, and operational inefficiencies. UDAN did not address them adequately and, sadly, Modified UDAN carries that failing over. The foremost one is weak underlying demand, with UDAN often picking routes with insufficient economic activity even as leisure and occasional travel could not sustain regular flights. Extending the subsidies, even if they are eased from the third year onwards, could keep routes alive for longer but will not of itself create demand. In this sense, the government's reluctance to revisit how it identifies and nurtures routes, and how different transport modes might substitute for air travel in low-density regions, seems inexplicable. The emphasis on last-mile connectivity and better planning also appears only partially incorporated as the details the Civil Aviation Ministry shared did not mention ground transport links or integrated scheduling, among others. Whether the decision to sustain connectivity using sustained government support, rather than cultivate a market that can stand on its own, will lead to lasting changes depends on whether route selection and integration with broader transport and economic networks improve in practice.

DreamIAS

**LIFE & SCIENCE****ARTEMIS II: WHAT IS AT STAKE FOR U.S.?**

The NASA Artemis II mission launched in the early hours of April 2 (IST). The giant rocket ascended en route to sending a crew of four astronauts to near the moon for the first time in more than half a century. In so doing, it marked a milestone for the U.S. space programme. Its crew — commander Reid Wiseman, pilot Victor Glover, mission specialist Christina Koch, and Canadian Space Agency astronaut Jeremy Hansen — are also the first humans to travel beyond low-earth orbit since Apollo 17 in 1972. Glover also became the first person of colour, Koch the first woman, and Hansen the first non-U.S. citizen to embark on a lunar trajectory.

The Artemis II mission uses the Space Launch System (SLS) rocket and the crew capsule is called Orion. The SLS will propel Orion into a free-return trajectory around the far side of the moon, reaching around 7,500 km from the moon's surface before the earth's gravity pulls them back to splash down in the Pacific Ocean in a little over a week.

The mission does not plan to land on the moon. Instead, NASA is flying it to prove that the whole system — from the ground teams to the rocket and its crew — works as designed and the processes to land humans on the moon are ready.

Mission profile

After the SLS core stage is separated, the crew will spend 24 hours in a high orbit around the earth as it checks the capsule's life-support and environment systems. If they're all in order, they will fire Orion's trans-lunar injection burn. The crew will also test manual piloting and proximity operations, communications and navigation systems, and a high-speed data relay and collect data about physiological and biological responses of the human body to deep-space travel.

Once Orion has finished going around the moon, it will be pulled towards the earth by gravity. NASA engineers expect the capsule will enter the earth's atmosphere at a speed of around 40,000 km/hr. Its 5-metre-wide heat shield will endure temperatures as high as 5,000° C.

NASA will be collecting important data at this time because during the Artemis I mission in 2022, engineers found that Orion's heat shield was eroded during re-entry as gases trapped in the shield's material cracked it. In response, NASA used the same material but this time modified the re-entry trajectory so that Orion spends less time in the atmosphere as it descends.

Artemis overhaul

Artemis II will be the first test flight in the programme since NASA Administrator Jared Isaacman overhauled the programme's milestones earlier this year. In the older plan, the Artemis III mission was to land humans on the moon for the first time in the 21st century. In the new plan, however, Artemis III will launch a crewed Orion capsule to earth orbit to dock with prototype lunar landers designed by SpaceX and Blue Origin to ensure the technology works. Mr. Isaacman has said this mission is currently planned for 2027. NASA will actually land American astronauts on the moon in the Artemis IV mission, currently planned for 2028.

This is why SpaceX and Blue Origin recently announced that they would focus on their plans to help U.S. astronauts reach the moon in the near future.



The restructure also addressed a deeper operational problem. NASA flew the Artemis I test flight in late 2022 and Artemis II has now flown in 2026. This three-year gap included workforce attrition that could have resulted in loss of institutional memory, forcing parts of the mission to start afresh. So instead, NASA abandoned a plan to upgrade SLS for the Artemis II mission; instead, it flew with the same configuration that flew on Artemis I. NASA also said it will increase the launch frequency, with the additional mission in 2027, followed by at least one mission landing on the moon's surface from 2028 onwards.

NASA also cancelled the Lunar Gateway project to build a space station orbiting the moon, and reallocated its components to infrastructure that will eventually be installed on the moon's south pole.

The Chinese pressure

Mr. Isaacman wasn't only responding to technical challenges. A big reason for NASA to change its plans to return to the moon so drastically is China. As he put it: "... with credible competition from our greatest geopolitical adversary increasing by the day, we need to move faster, eliminate delays, and achieve our objectives."

China is set to conduct a test flight of its new Mengzhou crewed spacecraft this year. Its new and powerful Long March-10 rocket made its first low-altitude flight on February 11. The Lanyue lunar lander, which will carry astronauts from orbit to the surface, is expected to make its maiden flight between 2028 and 2029. As for robotic missions: the Chang'e 7 moon mission is also expected this year. It will explore the moon's south pole region for resources like water. The Chang'e 8 mission is expected around 2029: it will have technologies to use resources on the moon itself, like a 3D printer that will try to build structures using lunar soil.

Importantly, China also plans to land humans on the moon by 2030 and subsequently unfurl its 'International Lunar Research Station' in the 2030s.

As the U.S.-China rivalry continues to dig in on the earth, with the entrenched hegemon reluctant to cede dominance and the rising power determined to reshape the international order, the space race they're leading wouldn't be what it is if it weren't for a particular limited resource: water on the moon.

There are craters in the moon's south pole region that have been permanently shadowed. These areas have escaped the drastic temperature swings on the parts of the moon that are exposed to the sun (from 127° C during the day to -173° C at night). As a result, they are expected to contain water ice. The thinking goes: whichever country establishes infrastructure first in this area could corner these water ice deposits and shape the scientific and geopolitical rules for everything that follows.

But in 2025, former NASA Administrator Jim Bridenstine told a Senate Commerce Committee hearing that without significant changes, it is highly unlikely the U.S. will beat China's projected timeline to land people on the moon.

If Artemis II and III go as planned and Artemis IV is able to lift off on time, U.S. astronauts could reach the moon's surface at least two years before China's mission. However, that depends on many things happening right on schedule — perhaps too many. Artemis I was delayed four times before it launched; Artemis II was delayed at least thrice. More broadly, whereas China has followed an incremental approach driven by the state, the U.S. has been following a commercial



model with a large coalition: more than 50 countries (through the Artemis Accords) plus private companies like SpaceX and Blue Origin.

Success versus failure

The Artemis II mission will last 10 days. Assuming it succeeds on all counts (since it is a test flight), it will prove the SLS rocket and the Orion crew capsule work, encourage NASA's partners to focus on Artemis III, potentially galvanise political commitment to land U.S. astronauts on the moon before China does.

Delaying launches, especially those including a human crew, is par for the course in spaceflight because safety comes first. But that doesn't mean these decisions exist in a vacuum. If Artemis II had been delayed again, for example, public as well as institutional confidence in SLS and Orion could have eroded further. There could have been cascading complications for NASA's partners, including the European and Japanese space agencies.

A delay could also have prompted the U.S. government to revisit the question of whether the programme is too expensive. It has so far cost at least \$93 billion and each new launch costs at least \$2 billion. SpaceX also still has to demonstrate the in-orbit refuelling technology that lunar missions require.

If, however, Artemis II had failed (or fails in the latter part of the mission), the time-wise consequences range from a small but important delay if the failure is non-catastrophic to a delay of several years as the programme is halted altogether if the failure is catastrophic. It will also give reason for NASA's partners to consider whether they should suspend or possibly exit their involvement and for the U.S. government to consider a more panicked programme just to beat China to the moon.

So as Artemis II launched, it did more than just send four people farther from the earth than any mission has in 54 years. It signalled that the U.S. is still in the race, against a China that has kept the U.S. anxious by almost always sticking to its schedule even as it thunders towards a crewed landing on the moon by 2030.

IN THE RUNNING

The sight of the giant rocket bearing the NASA Artemis II mission and its crew of four ascending into the sky in the early hours of April 2 (IST) brought cheers among onlookers on the ground and around the world. The mission has taken many years and several billion dollars to develop and brings the prospect of returning humans to the moon an equally giant step closer. The U.S. and China are currently leading the two poles of an international moonward race. A race implies winners and losers because they are keen to corner precious water deposits and landscapes on the moon and set up functional lunar bases, which could bias future missions in the winner's favour. NASA's Artemis programme and China's International Lunar Research Station are designed to include research outposts, refuelling depots, communication relays, and resource extraction sites, which would give their operators a head-start on any mission that depends on venturing further into cis-lunar space or towards Mars. While the idea of winning and losing is objectionable *vis-à-vis* the celestial commons, which should present equal opportunities to all participants in the global space programme, it is also naive to believe that the race is motivated by the urge to explore the universe. Extending geopolitical borders into space and projecting national prestige have been considerable driving forces of the new Space Age.



China's efforts have been more sheltered and powered predominantly by its own impetus, although they are no less impressive. The U.S., however, has included commercial operators and dozens of other countries via the Artemis Accords. The latter arrangement has made for apparently slower progress but in exchange for greater predictability in future, if and when the Artemis programme succeeds in full and assuming that the U.S. leadership will honour its commitment. India signed the Accords in 2023, thus agreeing to use outer space peacefully, transparently, and interoperably and to share data and resources according to their norms. While India is not an active participant in the Artemis missions in the way that Europe and Japan are, its human spaceflight programme, 'Gaganyaan', is in the works and it also plans to build a space station and take Indians to the moon by 2040. India could thus provide payloads and experiments for future launches, explore joint Artemis-Gaganyaan missions, and co-develop lunar activities under the Accords rather than start from scratch. These are useful benefits. In addition to reassuring the U.S. government that NASA remains in the race to the moon, the Artemis II launch allows the country's partners to look to the next steps.

FALCON 9 REENTRY POLLUTES UPPER ATMOSPHERE

The world is in the throes of a second Space Age, with space-based data and assets being increasingly integrated into terrestrial activities — from helping cars and ships find their way to predicting impending disasters. For this, various countries have launched thousands of satellites to orbit, with orders of magnitude more poised to launch in the coming years.

While this proliferation has raised concerns about orbital debris, scientists are increasingly also concerned about a different kind of fallout: the chemical pollution left behind when these objects burn up in the atmosphere.

Now, for the first time, researchers from Germany, Peru, and the U.K. have tracked a plume of metal vapour created by a Falcon 9 rocket reentering the atmosphere. Their findings, published in *Communications Earth & Environment*, confirm that space traffic is actively altering the chemistry of the atmosphere's uppermost reaches.

The study was driven by the rise of mega-constellations like Starlink, as part of which thousands of satellites are designed to de-orbit and burn up at the end of their five-year lifespans. When they do, they inject metals like aluminum and lithium into the mesosphere and lower thermosphere (MLT).

Scientists are concerned that this pollution could harm the ozone layer and change how the atmosphere traps heat.

On February 19, 2025, when the upper stage of a SpaceX Falcon 9 rocket made an uncontrolled re-entry over Europe, the researchers used a resonance lidar located in Kühlungsborn in Germany. The instrument fired a laser into the sky to measure the density of specific atoms nearly 100 km up.

To prove the connection to the rocket, the researchers combined a sophisticated atmospheric model with wind data from local meteor radars and they calculated backwards trajectories. This allowed them to trace the movement of air masses from the observation point in Germany back to the exact time and location where the rocket disintegrated. About 20 hours after the reentry, the lidar detected a surge in the number of lithium atoms at an altitude of 96 km — a concentration 10 times higher than natural levels.



Natural space dust, like that shed by meteors, contains very little lithium. In fact, the entire earth usually receives only about 80 g of natural lithium from space dust per day. But modern rockets and satellites use lithium-aluminum alloys for their hulls and lithium-ion batteries for power; a single Falcon 9 stage contains roughly 30 km of the metal.

The team's models showed the air mass had drifted 1,600 km from the west coast of Ireland, over which the rocket reentered, to the skies over Northern Germany. The team also checked for natural explanations such as geomagnetic storms and ionospheric interference.

As the mass of human-made objects re-entering the atmosphere begins to rival the mass of natural meteors, the ability to identify and track pollutants coming from the skies will be important. "The upper atmosphere, as the first part of the earth's environment impacted by re-entry, offers a valuable opportunity to observe ablated materials close to their source, before they undergo chemical transformation and atmospheric dispersion," the researchers wrote in their paper.

EARTH'S ORBITS ARE FILLING UP BECAUSE GOVERNANCE HASN'T KEPT PACE

Throughout human history, the sky symbolised freedom — vast, open, untouched. Today, that no longer holds. The earth's orbital environment has become crowded, fragile, and vulnerable, threatened by what is today evidently a failure of governance rather than just of engineering.

The language of space sustainability has grown familiar in international forums and policy documents. Yet familiarity has bred complacency. As launches become more frequent and the number of private actors multiplies, the gap between what is promised and what is implemented has continued to widen. The result is an orbital environment that is actively used, commercially exploited, and strategically warranted but ethically under-governed.

Orbital harm is difficult to govern because much of the debris capable of causing damage is impossible to track consistently. Authorities are also able to say which fragment came from which object only after it has caused some damage, and even then with limited certainty.

Reducing risk depends on having accurate information about when objects in orbit might come close to one another and exactly where they are.

But access to this information is uneven across satellite operators and countries, and it may be withheld for commercial reasons or kept secret for security reasons.

There's also no regular way to check whether operators actually follow through on promises to make satellites safe when they stop working, to move them out of the way or to bring them down once their mission ends, especially for small satellites or missions that last only a short time.

As a result, regulators mostly go by what companies say they will do before launch rather than on what regulators can confirm once the satellite is in orbit, which ultimately leaves responsibility unclear.

Responsibility and prevention

Even debris smaller than a coin, travelling at orbital velocities, carries enough energy to disable or destroy active satellites. Each collision generates thousands of new fragments, multiplying risk. International law obligates states to take reasonable measures to prevent foreseeable harm arising from activities under their jurisdiction. In the context of orbital debris, this means states need to plan for collisions, fragmentation, and long-term congestion — but do they? Indeed,

3RD FLOOR AND 4TH FLOOR SHATABDI TOWER, SAKCHI, JAMSHEDPUR



choosing not to mitigate risk is itself a decision because it expects others to deal with dangerous situations.

Orbital governance also remains anchored in outdated assumptions. The existing treaties were written for an era when space activity was limited, controlled by states, and innovation was slow. Importantly, they do not address cumulative harm and stewardship. Article VI of the Outer Space Treaty makes states internationally responsible for national activities in outer space, including those carried out by private actors. Article VII establishes liability for damage caused by space objects. Yet these provisions were not designed to prevent cumulative harm and are also poorly suited to preventing cumulative harm before it becomes irreversible.

At present, there is no international duty-of-care standard for the earth's orbits and no ethical threshold for 'acceptable' congestion.

National licensing regimes are one of a few mechanisms that can enforce orbital responsibility before damage occurs. Increasingly of late, before they approve a rocket launch or a mission, regulators need to be told the orbital lifetime, the ways in which the payload can be disposed of, whether it has provisions to avoid collisions, and whether it can be passivated (i.e. deprived of the ability to move around). However, regulators in different jurisdictions ask for different levels of details, so operators register in permissive regulatory environments.

To avoid this, licensing conditions need to be standardised, alongside mandating launch operators to use measurable debris-mitigation thresholds, compulsorily share data to improve space situational awareness, and use verifiable end-of-life disposal strategies.

The ethical vacuum is becoming more pronounced as new actors enter space. Nations entering spaceflight for the first time and private enterprises are central to the future of orbital activity — but will these actors inherit the permissive norms that produced today's congestion or will they help redefine responsibility for the decades ahead?

Principles embedded in international environmental law, including precaution, proportionality, and intergenerational equity, offer a useful guide. These principles recognise that uncertainty does not excuse inaction and that the way we use (non-rivalrous) resources today should not foreclose future generations' access to the same resources.

India's opportunity

The present moment is particularly significant for India. Its space programme has for a long time operated with tight constraints while delivering global services. As commercial participation expands and launch capabilities grow, India can either remain a silent participant or help shape their ethical norms. Specifically, as India develops its national space legislation and licensing regime, it has a chance to embed orbital responsibility as a legal requirement.

Ethical governance means recognising that shared environments demand shared restraint and that access to orbit carries obligations beyond national interest or commerce. Setting up such a governing system in turn requires us to answer some tough questions first: When does congestion become negligence? Who bears responsibility for cumulative risk? What obligations do present-day operators owe to future spacefarers?

Voluntary guidelines and rhetorical commitments no longer work; instead, governments and private sector enterprises must express the best principles of environmental governance in enforceable terms in space policy. Existing guidelines to mitigate debris in orbit, while being



technically sound, rely largely on voluntary compliance and lack uniform monitoring or sanctions for non-compliance. This has resulted in an uneven regulatory landscape in which the responsible operators absorb higher costs.

Space should be sustainable, which means we should be willing to build the ethical governance required to make it so. In space as on the earth, governance that waits for damage before assigning responsibility will arrive too late.

ENTANGLEMENT: SPOOKY ACTION

Scientists have shown that helium atoms can be entangled through their movement. A team from Australia and the U.S. collided clouds of helium atoms together to create pairs that shared a single quantum state.

The achievement showed that even ‘heavy’ particles could follow the same strange quantum physics rules that scientists have mostly observed so far in much lighter particles like electrons. The possibility also opens new ways for researchers to study the link between quantum physics and gravity — a famous unsolved problem in physics.

Quantum entanglement occurs when two particles become so deeply linked that they share a single existence.

The study achieved momentum entanglement, where the link involves the particles’ momentum. When scientists collided the atoms, the resulting pairs flew apart. Because of quantum mechanics, neither atom had a definite direction until a detector measured it. However, once they measured the momentum of one atom, they instantly determined the momentum of its partner, no matter how far apart they’d travelled.

In entanglement, one atom does not disappear and reappear elsewhere. Instead, teleportation involves quantum information: when a measurement defines the first atom’s state, that information effectively dictates the state of the second atom across the void. Albert Einstein famously called this “spooky action at a distance” because it defies everyday logic. In classical physics, objects usually only affect things directly next to them. Momentum entanglement proves that whole atoms can remain connected through a nonlocal bond.

SUM OVER THE PARTS

If hydrogen is combustible and oxygen aids combustion, how can water put out fires?

Compounds often behave differently than their constituent elements. Hydrogen is indeed a highly flammable gas and oxygen supports combustion, but when they bond together chemically, they transform into water. This chemical reaction actually involves burning the hydrogen. When hydrogen reacts with oxygen, it releases a large amount of energy and leaves water behind as a stable by-product.

In this sense, you can view water as the chemical ash of a hydrogen fire.

When you pour water onto a flame, the liquid absorbs heat as it turns into steam, depriving the fire of the thermal energy it needs to sustain the chemical reaction. The rapidly expanding steam displaces the surrounding air and cuts off the fire’s oxygen supply. However, water doesn’t work on every type of fire. Certain reactive metals can strip the oxygen atoms out of water molecules



and release pure hydrogen gas. Water conducts electricity, so using it on electrical equipment carries the risk of electrocution.

WHAT THE META-YOUTUBE RULING MEANS FOR SOCIAL MEDIA

The story so far:

A Los Angeles Superior Court jury, on March 25, found Meta Platforms and Alphabet's YouTube liable for designing platforms in ways that foster addiction and harm users' mental health. The case centred on a woman who was addicted to social media platforms. The jury awarded \$3 million in compensatory damages, which dispensed 70% to Meta and 30% to YouTube, and designated punitive damages of up to \$3 million, subject to judicial confirmation.

What did the verdict say?

The presiding judge at the Los Angeles Superior Court has yet to formalise the final judgment. The 20-year-old woman, known as Kaley, testified that her social media use began as early as age 6 on YouTube and age 9 on Instagram because of their attention-grabbing design.

Kaley's lawyers argued that features like infinite scroll, autoplay, and algorithm-driven notifications were specifically engineered to "hook" young users. She testified that this addiction exacerbated her depression, anxiety, and body dysmorphia.

The case focused on platform design rather than content, sidestepping Section 230 immunity by characterising social media platforms as "defective products," focusing on design elements such as algorithmic amplification and addictive features rather than third-party content, making it harder for the companies to avert liability.

Snapchat and TikTok were defendants in the trial, while both settled with the plaintiff before it began; the terms of the agreements were not disclosed.

What evidence swayed the jury?

The case reportedly relied on internal corporate documents, expert testimony, and user-behaviour data, pointing to evidence such as the 'Facebook Files', internal research reported by *The Wall Street Journal* in 2021 showing Meta knew Instagram could worsen body image issues for teenage girls, with one study noting that "32% of teen girls said Instagram made them feel worse." They also cited findings referenced in U.S. Senate hearings, where whistleblower Frances Haugen testified that company research linked platform design to anxiety and compulsive use.

In YouTube's case, it pointed to concerns that its recommendation system steers users toward increasingly engaging content to maximise watch time, an issue noted in academic research and media reports.

Why is this verdict a landmark?

The ruling is significant because it shifts liability from content to platform design. It challenges protections under Section 230 of the U.S. Communications Decency Act, long used to shield firms from responsibility for user-generated content. Courts have typically dismissed such cases under Section 230 protections. For instance, in *Gonzalez v. Google* (2023), the U.S. Supreme Court declined to hold Google liable for YouTube's algorithmic recommendations of ISIS-related content. Similarly, in *Twitter v. Taamneh* (2023), claims against Twitter, Facebook, and Google for aiding



terrorism were rejected due to insufficient proof of direct liability. These rulings reinforced that platforms are generally not responsible for third-party content, even when amplified by algorithms.

What changes for social media companies?

The verdict came a day after a jury in New Mexico found Meta liable for the way in which its platforms endangered children and exposed them to sexually explicit material and contact with sexual predators. If upheld, the verdict could compel platforms to rethink core design features. The ruling heightens demands for algorithmic transparency, as seen in proposals like the U.S. Algorithmic Accountability Act. Crucially, the risk of punitive damages and over 1,600 pending lawsuits could trigger costly, copycat litigation, making aggressive engagement-driven design legally vulnerable.

What is next for regulation?

At least half of American teens use YouTube or Instagram daily, according to the Pew Research Center. California is considering stricter rules on teen social media use, including potential restrictions on addictive features. At the federal level, lawmakers have proposed bills mandating algorithmic transparency and stronger child-safety protections.

Recently, countries such as Australia have imposed restrictions on children to stop or limit their use of social media. The U.K. is running a pilot programme to see how a ban on social media for people aged under 16 may work. If upheld on appeal, it could mark the beginning of a new era in which algorithmic design is scrutinised not just for efficiency, but for its societal and psychological impact.

Do You Know:

- Meta owns Facebook and Instagram and has over 3.5 billion users, while nine out of ten American teenagers aged 13-17 overwhelmingly use YouTube, according to a 2025 Pew Research Center report. Meta has long been accused of addictive platform design by parents, child safety groups and tech policy advocates, and of causing mental health issues resulting in eating disorders and self-harm.
- The Government of India is learnt to be considering a graded approach to regulate children's access to these platforms. For now, India has developed a framework of regulatory measures, self-regulatory codes, and educational initiatives, though critics argue that enforcement can be lax.
- Under the Digital Personal Data Protection Act, 2023, companies that collect the data of children – users under the age of 18 – must get their parent/ guardian's consent. They also cannot track, monitor a child's behaviour, or serve targeted ads directed to children. But it is widely believed that children would be able to get around this by simply misrepresenting their age.
- According to a report prepared by the think tank Indian Governance and Policy Project in November 2025, the Information Technology Act, 2000, has provisions which criminalises the creation of child sexual abuse material, the POCSO Act, 2012, defines and penalises online sexual exploitation and grooming, the Bharatiya Nyaya Sanhita, 2023 extends liability to digital/online offences against children including trafficking and harassment, and the Juvenile Justice (Care and Protection of Children) Act, 2015 addresses online facilitation of child exploitation.



- Under the Information Technology (Intermediary Guidelines and Digital Media Ethics Code) Rules, 2021, platforms like Netflix, Disney+ Hotstar, Apple TV etc. need to classify the content they host into five age based categories – U (Universal), U/A 7+, U/A 13+, U/A 16+, and A (Adult). These platforms are required to implement parental locks for content classified as U/A 13+ or higher, and reliable age verification mechanisms for content classified as “A”.

ADVOCACY GROUPS, CHILDCARE EXPERTS URGE YOUTUBE TO PROTECT KIDS FROM ‘AI SLOP’ VIDEOS

Advocacy groups and experts condemned YouTube for serving up low-quality artificial intelligence-generated videos to its most vulnerable audience: children.

In a letter to YouTube CEO Neal Mohan and Sundar Pichai, the CEO of YouTube’s parent company Google, children’s advocacy group Fairplay expresses “serious concern” about the spread of AI-generated videos on both YouTube and YouTube Kids.

The letter, which was sent on Wednesday morning, was signed by more than 200 organisations and individual experts such as child psychiatrists and educators.

“This ‘AI slop’ harms children’s development by distorting their sense of reality, overwhelming their learning processes and hijacking their attention, thereby extending time online and displacing offline activities necessary for their healthy development,” the letter reads.

“These harms are particularly acute for young children.” The letter calls on YouTube to clearly label all AI-generated content and ban any AI-generated content on YouTube Kids. They also propose barring AI-generated videos from being recommended to users under 18 and implementing an option for parents to turn off AI-generated content even if their child searches for it.

The letter is signed by 135 organisations, and around 100 individual. The letter is part of a larger campaign from Fairplay that also includes a petition.

Much of this AI-generated content is fast-paced with bright colours, lively music and clickbait titles that work to grab the attention of young viewers, the letter says. There has been a growing movement online against AI-generated content, particularly when it looks or feels low quality or leans into the meaninglessness of “brainrot”.

Spokesperson Boot Bullwinkle said that YouTube has “high standards for the content in YouTube Kids, including limiting AI-generated content in the app to a small set of high-quality channels”.

“We also provide parents the option to block channels. Across YouTube, we prioritize transparency when it comes to AI content, labelling content from our own AI tools, and requiring creators to disclose realistic AI content,” Mr. Bullwinkle said. “We’re always evolving our approach to stay current as the ecosystem evolves.” YouTube’s current policy regarding AI-generated content requires creators to disclose when content that’s “realistic” is made with altered or synthetic media, including generative AI. Creators are not required to disclose when generative AI is used to create content that is clearly unrealistic, including animated videos and those with special effects.

YouTube said it is actively working on developing labels for YouTube Kids.



In its letter, Fairplay argues that voluntary disclosure policy and what it sees as an “extremely limited” definition of altered and synthetic content mean kids still see a flood of AI-generated videos that are not labelled as such.

They also argue that many children who watch YouTube videos are not yet able to read or to comprehend something like an AI disclosure. That leaves children “to fend for themselves or their parents to play whack-a-mole”, the letter reads.

Fairplay’s campaign comes after Google’s AI Futures Fund invested \$1 million into Animaj, an AI animation studio that makes videos for kids and draws in staggeringly high viewership numbers, according to Bloomberg. The campaign follows a landmark verdict in a social media addiction trial in which a California jury found that YouTube designed its platform to hook young users without concern for their well-being. Meta was also found liable on the same counts as YouTube in the same case.

EARLY SCREEN USE STUNTS VITAL SOCIAL GROWTH OF CHILDREN, EXPERTS WARN

Be it our phones, tablets or our laptops — everyday, we interact with various digital devices designed to make our lives easier. Especially since the pandemic, even children have been exposed to this electronic world at a very young age. Earlier, parents would desperately brandish toys to distract crying children, now they tamp down tantrums using YouTube videos.

“Vision is very, very powerful for the human experience,” said Melissa Greenberg, a clinical psychologist at Princeton Psychotherapy Centre in New Jersey. “So kids get really drawn into the visual stimulation. And then, throughout childhood, they just miss opportunities to interact with the world through their other senses.”

Paediatricians and psychologists are increasingly concerned about how children may miss out on real-world interactions with people and objects if they are exposed to screens from an early age. This could affect their ability to develop healthy relationships with people around them as they grow older. And not just very young children, even older children’s or adolescents’ lives can bear the brunt of increased screen and social media usage in the form of poorer emotional regulation, detachment from reality, loss of focus, and a host of other mental health problems.

Dr. Greenberg also draws her insights from her personal life, with two children aged six and eight. Having raised them through the pandemic, she understands the perils of isolation and the importance of interacting with others. Many parents, including herself, were in a difficult situation because of the constant social distancing, so they may have handed tablets to children without thinking too deeply about it, she said.

“We are not in the pandemic anymore, but I think parents find themselves in these positions where they’re exhausted or they are also dependent on screens,” she explained. “And they need their kid to be entertained for a few minutes, and they just hand them something.”

But unknowingly, they may end up opening their children’s eyes to a whole other online world — without a clear picture of everything they might get access to and how it will shape them.

Grow up to feel uncomfortable

To build some safeguards after the pandemic, the American Academy of Paediatrics recommended that children below the age of two should have very limited screen time, unless it



is for video calls. This is primarily because those early years are when children are still developing their senses. Overwhelming them with visual stimuli — even if unintentionally — can skew their sense of the world and affect their interactions with others. Hunching over phones can also affect children’s posture.

“If you’re looking at a screen, you are not doing all of the other things that babies should be doing, [like] crawling, touching, exploring the world around them,” Dr. Greenberg said. “So I don’t know that the screen itself is the problem; it is the opportunity cost of babies exploring their environments — that is how they learn about the world around them.”

Some children experience the consequences of being absorbed in a digital screen later as well, as they get a bit older, enter adolescence or become teenagers. With more time online, some children grow up to feel uncomfortable with in-person interactions as well. One recent study in the *Journal of the American Medical Association* on U.S. youth reported that teenagers spend an average of about 8.5 hours a day on screen-based entertainment.

“You go into a cafeteria in a school... 15 years ago it would have been chaotic and loud and everyone’s playing and moving around. Now you walk in and everyone’s like this,” she said, mimicking being hunched over a phone. “They’re all quiet.”

Just like with toddlers, this could also lead to missed opportunities of meaningful social interactions with peers at a young age. Being unable to develop proper social skills could strain relationships with friends and family, with lifelong repercussions for mental health.

Drastic consequences

At times, the mental health issues can take a darker turn. Some children have unfettered access to phones even before they are eight years old, which, according to recent research, could lead to issues such as hallucinations, feelings of aggression towards other people, diminished self-worth, and even suicidal thoughts as they grow older. The data, based on self-reported assessments from several thousands of people worldwide, suggest that for each year younger than 13 that children get their phones, the more their mental health issues increase as they enter adulthood.

An extreme case of phone addiction transpired recently in Ghaziabad in Uttar Pradesh. Three minor sisters aged 12 to 16 years had dropped out of school in 2020 and were addicted to social media, cartoons, and TV shows on their parents’ phones. When their parents restricted their phone use and threatened to get them married, the sisters killed themselves by jumping off their balcony in the early hours of February 4. In the note they left behind, the girls described how banning them from the online shows made them feel lonely. This is not an isolated incident: multiple instances of teens killing themselves when told to stay away from phones suggests an alarming rise in digital addiction.

One reason for such drastic consequences could be that children are being brought up by technology instead of human beings, Tara Thiagarajan, who led the research correlating age of phone access to mental health issues and is the founder of Sapien Labs, a non-profit organisation studying how the human mind is changing over time across the world, said.

Take the case of a child at a table with their family in a restaurant. This situation has opportunities for simple social interactions. In a previous era, the child might have been reaching for things, trying things, and saying things to the others. Some people might reprimand; others might coo at the actions.



Such interactions teach children how to read other people's body language from a young age and how to conduct themselves in a group setting, including getting themselves heard, holding conversations, and managing conflicts. Dr. Thiagarajan said growing up in a world dominated by online interactions prevents children from learning these social skills and interferes with their ability to develop a good intuition of other people's personalities.

Although engaging in video calls with other people is better than watching videos, one can end up missing larger environmental cues, per Dr. Greenberg. Some subtle cues can slide through unnoticed on a video call, like noticing someone's nervousness by how they are tapping their feet.

Aspects like the tone of voice, facial expressions, body language, and other non-verbal cues may either be warped or absent altogether in digital exchanges, which can affect children's abilities to form lasting inter-personal relationships. "You're becoming adept at technology, but you can no longer manage in a human world," said Dr. Thiagarajan, of children growing up in a society undergoing rapid "technologisation".

"When most of what goes on in your mind is from the screen, you've lost, to a large degree, your awareness of the physical environment around you. That's what creates these feelings of detachment from reality, and also the hallucinations."

'It's not just about your children'

In another meta-analysis of 117 previously published studies, Michael Noetel at the University of Queensland and his colleagues reported similar findings: that increased screen time leads to more socioemotional problems in children. Tracking nearly three lakh children over time, they found "screens and emotional problems feed into each other like a vicious cycle," according to Dr. Noetel. "Kids who spend more time on screens are more likely to develop anxiety, depression, aggression, and attention problems. But it works the other way too: children who are already struggling emotionally turn to screens to cope."

Because anxious children tend to use their phone more, Dr. Greenberg said that it is tricky to tease apart correlation from causation vis-à-vis screen use. But she noted that increased cell phone usage and social media exposure could exacerbate existing conditions. "Anecdotally speaking, everyone I work with feels better when they spend less time on their devices," she said.

To prevent children from getting addicted, parents should ensure that their children use phones for a limited time, based on what is recommended for their age group, according to Dr. Noetel.

"Children who stayed within guidelines showed almost no increased risk. Guidelines recommend under an hour for preschoolers, under two hours for older kids," he said. "Problems appeared when children regularly exceeded these limits."

Even if parents limit screen use, Dr. Greenberg said that the question of whether children should have access to phones at night, or when they are alone in their rooms, should also be addressed. "When a child is doing something privately on a device unsupervised, no matter how many parental controls you might set, they may access things that are really inappropriate," she said. "Because of the way that the algorithms work, you really never know what might pop up next on your children's feed."

Dr. Thiagarajan explained how the internet should have more water-tight gateways that prevent children from accessing dangerous content, which could include porn sites or violent videos.



Dr. Greenberg also emphasised how each child is different: some may be able to give up their screen time readily but some may be more drawn to the digital world, and thus could find it more difficult to limit their online activities. Her own children are like that, she admitted, and they are most likely in the majority. “If you have a kid who has a harder time putting it away, that doesn’t mean you should just let them continue to have it,” she said. “It means you really need to work with them to figure out how to manage the impulses so that they develop good habits around putting it away.”

Dr. Greenberg also pointed out that parents should be careful about their own screen use around their children: “They should be aware that their kids are always watching and learning from them and observing their habits, and that that’s a really important factor in how you’re managing screens with your kids,” she said. “It’s not just about your kids; it’s also about you.”

INDUCTION COOKTOP TECHNOLOGY

The war in West Asia has resulted in a severe disruption to cooking gas supplies in India and driven up the price of LPG cylinders. This has led to a surge in the sale of induction cooktops in the country. How does it manage to cook food? The answer to that lies in the simple concept of electromagnetic induction.

Core Concept

— Traditional gas stoves rely on combustion to create an open flame. But an induction cooktop bypasses this combustive chemical reaction. Its glass surface also remains relatively cool.

— Beneath the smooth ceramic or glass surface of an induction cooktop sits a tightly wound coil of copper wire. Switching the stove on completes the circuit and allows the flow of alternating current (AC) through the wire. The alternating current generates a rapidly fluctuating magnetic field directly above the cooktop.

— This changing magnetic field passes effortlessly through the glass surface and the surrounding air without heating either the surface or the air. This allows the cooktop surface to largely maintain its temperature. Any warmth it acquires is from contact with the hot pan.

— So how does the food get hot? Here’s where we get into some science, specifically Faraday’s Law of Induction. This law says that a changing magnetic field shall induce a voltage and, consequently, an electric current in any and all nearby electrical conductors — for example metal.

— So when the metal pan sits inside this intensely fluctuating magnetic field, it acts as a conductor. And localised, swirling electrical currents are generated inside the bottom of the pan itself. Known as eddy currents, these are pivotal to the heat-generation process.

— But metals such as iron are not perfect conductors. They have an inherent electrical resistance. So when the eddy currents swirl through the atomic structure of the pan’s base, they encounter this resistance. The ensuing electrical friction between the two converts the kinetic energy of the moving electrons directly into thermal energy (heat).

— When the pan itself becomes the primary heat source, the energy transfer also becomes efficient. Induction cooktops convert about 85% to 90% of their electrical energy directly into cooking heat.



Induction cooktops vs LPG stoves

— Induction cooktops: works on electromagnetic induction, eddy currents, and resistance heating. Induction cooking is faster, safer and ultimately a highly resilient alternative to unpredictable fossil fuels. However, they are less durable than LPG stoves, harder to repair, dependent on electricity and not compatible with all cooking styles.

— **LPG stoves:** works on combustion and transfer heat mainly through radiation and convection. Traditional LPG stoves hover around 40% to 50% efficiency. However, a gas flame loses a massive amount of its thermal energy to the ambient air around the pot.

DIMETHYL ETHER (DME)

The Council of Scientific and Industrial Research – National Chemical Laboratory in Pune has developed an indigenous process technology to produce DME from methanol dehydration, which can potentially be blended with Liquefied Petroleum Gas (LPG) as an alternative clean fuel.

Core Concept

— DME is a synthetically produced alternative fuel that can be directly used in specially designed compression ignition diesel engines for various purposes. Under normal atmospheric conditions, DME is a colourless gas. It is used extensively in the chemical industry and as an aerosol propellant, solvent, fuel, and refrigerant.

— DME exhibits comparable calorific value and similarity of its thermal efficiency to traditional fuels; It is a clean-burning fuel with low emission and low particulate matter.

— Most importantly, it has already been used as an ozone-friendly aerosol propellant to replace ozone-destroying chlorofluorocarbons (CFCs). Therefore, it can also be used as a refrigerant. Also, it is an essential intermediate for producing valuable chemicals such as lower olefins, dimethyl sulfate, and methyl acetate, which can help to boost the economy of the nation.

— DME can be considered as a ‘Second Generation fuel/bio-fuel’ with a slight ethereal odour. It liquefies under pressure (10 bar at 40°C), and these properties of DME are like propane. Moreover, it is relatively inert, non-corrosive, non-carcinogenic, almost non-toxic, and does not form peroxides by prolonged exposure to air.

— Its physio-chemical properties make it a suitable substitute (or blending agent) for LPG. Therefore, DME can be used as a fuel in household cooking gas and industries.

— Notably, Methane does not directly produce DME, but serves as a starting material. It is first converted into syngas (CO and H₂), and then into methanol, which is used to produce DME. Methane can be sourced from both fossil fuels and renewable sources, DME production is flexible and future-ready.

— LPG is a relatively clean, portable, and efficient energy source. It is colourless and odourless and a strong “stenching” agent is added so that even a very small leak can be easily detected.

— At a normal temperature, LPG is a gas. When subjected to modest pressure or cooling, it transforms into a liquid. As a liquid, it is easy to transport and store.



- LPG is an energy-rich fuel source with a higher calorific value per unit than other commonly used fuels.

TAR BALLS

The Centre has, for the first time, proposed dedicated rules to manage tar balls. The Tar Balls Management Rules, 2026, assign responsibilities for the generation, collection, storage, transport, treatment, and disposal of this pollutant, including its repurposing as fuel in cement production.

Core Concept

- Tar balls are dark-coloured, sticky, weathered residue from oil leaks, spills, effluents, and accidents that cause onshore and offshore marine pollution.
- Tar balls are formed by weathering of crude oil in marine environments. According to NOAA, when crude oil (or a heavier refined product) floats on the ocean surface, its physical characteristics change. During the first few hours of a spill, the oil spreads into a thin slick.
- Winds and waves tear the slick into smaller patches that are scattered over a much wider area. Various physical, chemical, and biological processes change the appearance of the oil. These processes are generally called “weathering.”
- Weathering processes eventually create a tarball or flattened tar patty that can be hard and crusty on the outside and soft and gooey on the inside.
- Some of the tar balls are as big as a basketball while others are smaller globules. Tarballs are usually coin-sized and are found strewn on the beaches. However, over the years, they have become as big as basketballs and can weigh as much as 6-7 kgs.
- Tar balls affect flora and fauna and the tourism industry through its deposition on beaches, especially India’s western coast, where tar balls wash ashore during the monsoon due to strong winds and currents.
- These tar balls contain toxic contaminants, such as heavy metals, trace elements, and persistent organic pollutants, and pose environmental and health risks.

Tar balls vs Microplastics

- Microplastics are tiny particles of less than five millimetres in size. They broadly classified into primary microplastics – intentionally produced microplastics such as those found in cosmetics – and secondary microplastics – resulting from the decomposition of larger plastic materials.
- The small, shiny particles advertised as “cooling crystals” in certain toothpastes qualify as microplastics if the ingredients of the toothpaste mention “polyethylene”.
- These plastics are non-biodegradable and remain in the environment for a long time after their improper disposal. They degrade into smaller particles through physical, chemical, or biological processes and persist in the environment due to their slow degradation rate.



GERMANY'S WORLD WAR-ERA MUNITIONS LEAVE A TOXIC LEGACY ON BALTIC SEA FLOOR

Below the waves off Germany's northern tourist beaches, a toxic time bomb lurks on the Baltic Sea floor — enormous quantities of Second World War munitions that are slowly rusting away.

Scientists warn that as salt water corrodes the metal casings on rockets, artillery shells and bombs, they will release contaminants such as the explosive TNT into the marine environment.

To better map the dangers, a research vessel set sail this month from the port city of Kiel, whose bay is among the most polluted with unexploded ordnance. A dozen scientists from Germany, Poland and Lithuania, backed by an 11-strong crew, are to spend three weeks on the Alkor, operated by the Kiel-based GEOMAR oceanographic research centre.

The voyage will take them past a sunken torpedo boat, a destroyer, a minesweeper and a submarine, all identified from naval logbooks and other records in the German military archives.

"One of the goals of the project is to develop some new tools for cleaning it up," said Aaron Beck, a scientist leading the expedition. "The idea is, what can we do to prevent this before the pollution comes out?"

Along the German coast, about 1.6 million tonnes of munitions litter the seafloor, especially near the ports of Kiel and Luebeck, making it one of the world's most contaminated areas.

Most munitions were hastily dumped there by the victorious Allied powers after Germany's 1945 surrender, to quickly eliminate what remained of the Nazi war machine.

Marine pollution

Almost 80 years on, traces of carcinogenic explosives have been detected in shellfish and other sea life throughout the area.

The Baltic is shallow, with only a narrow passage between Sweden and Denmark leading to the open ocean, meaning pollution tends to linger.

A modern-day boom in undersea construction of pipelines, telecom cables and offshore wind farms has cast a new spotlight on the issue.

The scientists on the ship are using an underwater robot to film the seabed, as well as probes to collect sediment and water samples.

They are also dispersing packets of mussels, which they will later retrieve to study the levels of contamination ingested.

Mr. Beck, however, reassured that the pollution does not pose an immediate danger to humans.

"For a human being to ingest, at current concentrations, a concerning amount of explosive compounds, they would have to consume seven kilos of fish a day for more than a year," he said.

Ammunition on the sunken warships is not the only environmental danger.

"On some of these ships, you have 10 tonnes of ammunition, but 200 tonnes of fuel. That's undoubtedly the biggest problem," Mr. Beck said.



One wreck still holding fuel is the *Franken*, a German navy tanker torpedoed by Soviet forces on April 8, 1945. It sank off what is now the Polish city of Gdansk, at the time still the German city of Danzig.

Uwe Wiechert, 70, a former German naval officer and part of the research team, called it a “time bomb”.

The *Franken* also poses a legal conundrum, he said: who will pay to pump this fuel from a German ship, sunk by the Soviets, that now rests in Polish waters?

Seafloor munitions dumps are a global problem, with other major sites located along the coasts of the U.S., Britain, Japan and Australia and even in Swiss lakes.

Germany has been at the forefront of European efforts to deal with unexploded underwater ordnance, says the European Commission. Beyond mapping the problem, Germany has taken first steps toward munitions disposal.

In Luebeck Bay, a pilot project to destroy Second World War munitions has begun.

Divers and underwater robots have sorted through tonnes of dumped munitions at four sites in the bay as part of the project. But it remains unclear whether the pilot project could become a model for cleanups elsewhere.

When a similar project might start in waters off Kiel, said Mr. Beck, “is anybody’s guess”.

SECRETIVE JUNGLE CATS NEED HABITATS OUTSIDE PROTECTED AREAS: STUDY

Jungle cats (*Felis chaus*) are found across diverse habitats, from grasslands and wetlands to deserts. They are present across Asia, with large populations in India and Nepal, among others. The IUCN Red List lists the species as being of ‘least concern’.

This has led to a “misconception that they are doing fine”, Kathan Bandyopadhyay, a postdoctoral research associate at the University of Illinois Urbana-Champaign, said.

Jungle cats’ populations are in fact considered to be shrinking. In India, they are protected under Schedule II of the Indian Wildlife (Protection) Act 1972, which means hunting or trading them is illegal.

Despite being the most widespread of India’s small cats, jungle cats are understudied and have received little conservation attention relative to larger carnivores such as tigers and leopards.

Conservation baseline

This animal — with a white muzzle, yellow irises, large ears ending in black tufts, and the sometimes faint striping on its long legs — avoids dense forests and heavily-modified landscapes, preferring agro-pastoral and open habitats, according to a new study based on the largest dataset on the species in India.

The study was published in *Scientific Reports*, and provides a baseline for future conservation planning.



“Until now, we didn’t know about their population status or how they are responding to several habitat and climatic covariates,” Dr. Bandyopadhyay, who undertook this research as a PhD student at the University of Wyoming, said.

The team found human pressure to be the foremost factor influencing where jungle cats live and that while they can tolerate moderate levels of human disturbance, they avoid densely populated areas.

“Our results highlight the importance of agro-pastoral landscapes in conserving wildlife beyond protected areas, especially as urbanisation continues to expand,” Dr. Bandyopadhyay said.

‘An important analysis’

To estimate how many jungle cats were in India and where, the team compiled camera-trap records from more than 26,000 locations across India. These records were a ‘bycatch’ of tiger surveys and were supplemented with data from previous studies, radio-collared individuals, and the authors’ personal observations. The researchers then included one camera-trap record every 25 sq. km, one radio-collar data point from every 5 sq. km, plus all secondary data (from outside protected areas). Then they used machine-learning to model suitable habitats using the final dataset of over 6,000 records.

The team combined these results with sex-specific home range data to estimate a countrywide population of over 3 lakh jungle cats, with at least 1.57 lakh and at most 4.59 lakh individuals. “It’s an estimate. It gives you a limit within which the cat is likely to be,” Yadvendradev Jhala, senior scientist at the National Centre for Biological Sciences and the study’s co-author and co-supervisor, said.

Across 21 States with suitable habitats, Madhya Pradesh, Rajasthan, and Odisha were estimated to support the largest populations.

The study is an “important analysis” and has “strengthened the observation that the jungle cat is tightly associated with open natural ecosystems, currently under enormous threat of conversion to other forms of land use, such as built-up areas and large-scale linear infrastructure like highways,” Shomita Mukherjee, senior principal scientist at the Salim Ali Centre for Ornithology and Natural History, Coimbatore, and a member of the IUCN/SSC Cat Specialists Group, said. Dr. Mukherjee was not a part of the study.

Ideal landscapes

Per the study, jungle cats prefer warm, semi-arid regions that are seasonally dry, with moderate rainfall and canopy cover. Their predicted hotspots lie in India’s east rather than in the drier west.

India needs land policies that recognise the ecological value of open ecosystems, Dr. Mukherjee added.

According to her, the finding that jungle cats use agricultural landscapes aligns with previous knowledge of the species. In and around farms, these cats keep rodent populations in check, thus ‘protecting’ crops.

However, these landscapes lie outside protected areas and harbour several threats, including fragmented habitats, speeding vehicles on roads, and poaching, according to the study.



It also pointed to a potential threat from hybridisation with domestic cats, which could compromise their genetic lineage, although Dr. Bandyopadhyay and Dr. Mukherjee cautioned that this idea doesn't have enough evidence.

Another key threat is the stray dog population, which "acts as a source of wildlife diseases and kleptoparasitism — that means snatching kills from jungle cats and other carnivores," Dr. Bandyopadhyay said.

Per the study, stray dogs could share foraging spaces with other livestock, so where there is livestock, there could be the risk of these canines as well.

A policy for small cats

According to Dr. Mukherjee, the study's strengths lie in its large spatial coverage and sample size, although she added that jungle cats from Sikkim had been left out and that the population figures were based on a "meagre dataset of a few radio-collared individuals in just a couple of locations".

"Yet this should not be seen as a limitation but an effort to get the best out of data currently available," she added.

Dr. Bandyopadhyay said the records from Sikkim were sporadic and insufficiently viable for the models.

Scientists still have a great number of unknowns, including jungle cats' denning sites, litter sizes, ranging patterns, densities, and diets.

Small cats are generally hard to study because they are nocturnal and secretive. Public awareness is also low, and few organisations have been willing to fund more study.

Going forward, Dr. Jhala said, there is a need to plan wildlife passageways alongside infrastructure development in agro-pastoral and open habitats. "When roads pass through a tiger or elephant corridor, there is a policy to try and mitigate those. But when they pass through agro-pastoral landscapes, we don't plan for it even though these areas support rich biodiversity," he said.

RARE WHALES IN THE WAY OF TRUMP'S OIL DRILLING PLAN

One of the world's rarest whales lives in the Gulf of Mexico, where the Trump administration wants to expand oil and gas drilling that scientists fear could push the giant mammal to extinction.

Endangered Rice's whales live their entire lives in the gulf, where they are vulnerable to vessel strikes, noise pollution, oil spills, and climate change — all of which could increase with more drilling. Other animals, including threatened manatees and endangered sea turtles, also could be put at risk.

As the Iran war pushes energy prices sharply higher, U.S. Defence Secretary Pete Hegseth invoked national security in seeking an exemption from endangered species laws, which make it illegal to harm or kill species on a protected list. The seldom-used Endangered Species Committee granted that request on Tuesday.

Rice's whale is the only whale species that lives year-round in the Gulf of Mexico, where there are fewer than 100 left, per scientists.



Recognised as a distinct species in 2021, Rice's whale is usually found in a narrow area in the northeastern part of the water body.

They dive to the gulf floor for fatty fish, mainly silver-rag driftfish, during the day, then rest close to the surface at night. These dives are strenuous and their specific kind of food might also be affected by more drilling and other changes. Which means they are "quite living on the edge," Jeremy Kiszka, a biological sciences professor at Florida International University, said.

The whales are also susceptible to pollution, with a significant portion of an already small population believed to have been killed by the 2010 Deepwater Horizon oil spill. Many climate change impacts are "baked in," meaning they will persist even if fossil fuels were eliminated today, said Letise LaFeir, chief of conservation and stewardship at the New England Aquarium.

But the Trump administration proposal "is just compounding the immediate risks locally and the longer-term risks," she added. Although a government filing specifically mentions Rice's whales, other threatened and endangered animals also could be harmed by oil spills or other dangers, scientists said.

For example, hundreds of sea turtles, including endangered Kemp's Ridley and loggerheads, are rescued and rehabilitated every year before they are released into the Atlantic Ocean and swim for their nesting grounds in the Gulf, per Ms. LaFeir.

Before Tuesday, the committee had only issued exemptions twice. The first was for the construction of a dam on a section of the Platte River considered critical habitat for whooping cranes, though a negotiated settlement won significant protections that led to overall ecosystem improvements.

The second was for logging in northern spotted owl habitat, but the request was withdrawn after environmental groups sued, arguing that the committee's decision was political and violated legal procedures.

EARTH'S ENERGY IMBALANCE

The global climate is in a state of emergency as the earth is dealing with a record energy imbalance, the World Meteorological Organization (WMO) said in its recently released State of the Global Climate report 2025. The 2025 report for the first time included the earth's energy imbalance as one of the key climate indicators. Earth's energy imbalance is the highest in a sixty five-year record.

Core Concept

— According to WMO, earth's energy balance measures the rate at which energy comes in and leaves the Earth system.

— Under a stable climate, energy received by the earth from the sun is almost the same as the amount of outgoing energy. However, rising concentrations of atmospheric greenhouse gases — carbon dioxide, methane and nitrous oxide — to their maximum level in at least 800,000 years have upset this energy equilibrium on earth.

— Albedo is the percentage of light that a surface reflects. It refers to how much energy a surface reflects. If everything is reflected, the albedo equals one. If 30% is reflected, the albedo is 0.3. The



albedo of the Earth's surface (atmosphere, ocean, and land) affects how much incoming solar energy, or light, is promptly reflected back into space. This could have an impact on the climate.

— Dark colours have an albedo near 0, indicating that little or no energy is reflected. Pale colours have an albedo close to 100%, which means that almost all of the energy is reflected.

— Notably, albedo affects incoming energy absorption, whereas energy imbalance measures net energy difference. So:

Change in albedo → alters absorbed solar energy → contributes to energy imbalance.

IS GLOBAL WARMING BEING MEASURED COMPREHENSIVELY? A NEW STUDY FLAGS GAP

Not all greenhouse gases behave the same way. Some linger for centuries; others hit hard and fade fast. Yet climate policy has long treated them as broadly comparable, using a single yardstick. A new study argues that this may be skewing carbon markets, and undervaluing some of the quickest ways to slow warming today.

Key Takeaways:

- The study, published in the UK-based journal Environmental Research Letters, proposes a new framework called Radiative Forcing-based Accounting, or RFA, which aims to measure climate impact to better reflect how different gases warm the planet over time.
- The issue matters because the way emissions are counted affects how carbon credits are valued, which projects receive support, and how quickly climate benefits are delivered.

Do You Know:

- Climate policy uses a common unit to compare different greenhouse gases. That unit is called carbon dioxide equivalent, or CO₂e.
- Since carbon dioxide is the benchmark gas, other gases such as methane are converted into CO₂e using a multiplier called Global Warming Potential, or GWP. For more than 30 years, the world has mostly used GWP100, which measures the warming impact of a gas over a 100-year period. Under this system, one tonne of methane is assigned a fixed CO₂-equivalent value.
- To convert methane emissions into CO₂ equivalent (CO₂e), the amount of methane emitted (in tonnes) is multiplied by a factor called the Global Warming Potential over 100 years (GWP100). This factor represents how much warming methane causes compared with carbon dioxide over a 100-year period. For methane, this value is approximately 28, meaning methane has about 28 times the warming impact of CO₂ over 100 years.
- By multiplying methane emissions by this factor (28), we express the emissions in CO₂-equivalent terms. More generally, converting methane to CO₂e requires applying a numerical multiplier that reflects methane's warming potential relative to CO₂ over a chosen and comparable time period.
- cutting methane emissions is one of the fastest ways to slow warming in the near term.

It stays in the atmosphere for about 12 years, but during that time it traps a great deal of heat. That means methane cuts can reduce warming sooner than many other climate actions. The



proposal note also argues that present accounting tends to underestimate short-lived climate pollutants such as methane and black carbon.

BRAZIL REQUISITIONS SERVICES OF BANK MANAGERS TO COMBAT DEFORESTATION

After struggling for years to track and punish deforestation across the world's largest rainforest, Brazil is recruiting new allies in the battle to protect the Amazon: bank managers.

A new rule taking effect on Wednesday requires banks to check if rural loan applicants have any deforestation on their farms using government tools that provide data about them based on satellite imagery.

If bank managers detect any clearing since 2019 in the Amazon or woodlands, farmers applying for government-funded rural credit must show proof of deforestation permits to get their loans approved.

The new policy has drawn blowback from Brazil's powerful agribusiness sector, whose deep pockets and growing opposition to the government may shape October elections. The Agriculture Ministry itself argued to scrap the rule late last year.

But advocates argue the government needs more weapons in its anti-deforestation arsenal. As on-the-ground enforcement has become more difficult, the rule change aims to bring deforesters to heel by withholding billions of dollars of subsidised public credit.

The policy and its blowback reflect President Luiz Inacio Lula da Silva's commitment to one of his most globally salient pledges: to end deforestation in Brazil by 2030 — an ambitious goal in a country that still records the most tropical forest loss every year.

Farmers pushback

Denying public credit to some farmers on Brazil's fast-expanding agricultural frontier may stir deeper resistance from rural power brokers already skeptical of the leftist Lula and hurt his appeal in farm states such as Mato Grosso and Goiasas he runs for re-election. The new policy includes a provision blocking subsidised credit to farms if those funds would be used to clear native vegetation, even where farmers have permits to deforest.

"You can still do it, but with your money, not with public money," Lima said. Debate over the new rule may wind up in Congress, where Lula has already lost many battles over the environment, including over a law that gutted the country's permitting process.

Brazil's National Confederation of Agriculture and Livestock (CNA), the biggest farm lobby group, said it will work to change the rule in Congress, which has a powerful farm caucus.

In a statement, the group said that government tools using satellite images to detect deforestation make mistakes and could lead banks to withhold credit unfairly.

Data from two academic studies between 2019 and 2021 pointed to 93% accuracy in the government satellite system tracking deforestation, known as Prodes. The studies found that Prodes errs more often in ignoring deforested lands than in reporting deforestation where it never happened.



NEWFOUND BRAIN NETWORK 'SCAN' IMPLICATED IN PARKINSON'S DISEASE

Parkinson's disease affects more than 10 million people worldwide. A patient struggles to perform coordinated movement, requiring conscious effort and attention even for a simple task like buttoning a shirt. Natural movements like walking and turning have to be planned as the person will struggle to start and stop actions.

Over time, the person will move slower, become unstable, and suffer tremors.

Now, new research reveals a brain network promising precise targets for treatment.

Higher order networks

To date, various treatment options are available, but none are ideal. For example, pharmacological treatment with levodopa, a dopamine precursor, partially alleviates Parkinson's symptoms. However, the effect of levodopa is variable and repeated use causes side-effects like uncontrolled movements. Another approved therapy is deep brain stimulation (DBS), wherein electrodes are surgically implanted inside specific brain regions.

"However, DBS is expensive and invasive, albeit not risky," Prashanth Kukkle, consultant neurologist at the Parkinson's Disease and Movement Disorders Clinic, Bengaluru, said.

Non-invasive therapies like transcranial magnetic stimulation (TMS), where magnetic fields are applied to stimulate nerve cells, are at an experimental stage and require "sweet spots, or precise targets that can bring about dramatic improvement, which are still being explored," Dr. Kukkle added.

Until recently, neurologists were probing motor-effector areas of the motor cortex, which are surface-level brain areas controlling muscular activity of individual body parts like the foot, arm, and mouth. However, dysfunction in these regions has not been sufficient to explain the coordination deficits seen in Parkinson's.

A prevailing hypothesis has been that higher order networks — large-scale, interconnected clusters integrating information across brain regions for complex cognitive functions like planning and attention — may be involved. A new study in *Nature* addressed this hypothesis and found that Parkinson's disease is associated with the abnormal strengthening of a brain network called the somatic cognitive action network (SCAN).

The study's findings have uncovered previously elusive precise targets that could improve efficacy of modulatory therapies for Parkinson's.

Cautious optimism

The findings have clinical implications. In the study, the authors conducted a preliminary trial where 18 people with Parkinson's disease were randomly assigned to receive TMS directed at the SCAN regions. Compared to a control cohort whose brains were stimulated at the effector regions, the SCAN-targeted group showed significantly less tremors, rigidity, slowness, and instability within two weeks.

Both Dr. Dosenbach and Dr. Fasano agreed that a TMS therapy directed at SCAN for Parkinson's disease patients is on the horizon.



“In future, there will be both non-invasive and minimally invasive neuromodulatory therapies aimed directly at SCAN in a personalised manner using PFM,” Dr. Dosenbach said.

Dr. Kukkle remained cautiously optimistic: “Being superficially located in the cortex, SCAN is easily accessible by TMS for non-invasive modulation.” However, he added that SCAN is also a newly discovered brain region that has yet to be included in standard medical textbooks and atlases: “While this paper shows rational, biological plausibility and early clinical evidence, it has to be seen whether it converts to routine clinical practice.”

EXRNA: ON A MISSION

In a study published in the journal *Clean Water* on March 28, scientists reported that extracellular RNA (exRNA) from bacteria can persist in disinfected drinking water. They also found that by studying the exRNA, they could figure out what the bacteria were doing just before they were damaged or killed, releasing the exRNA. This way, the scientists could figure out which survival strategies worked for the bacteria — which can be used to make better disinfectants.

exRNA is RNA that exists outside cells, in body fluids such as blood, saliva, urine, and cerebrospinal fluid. For decades, scientists believed RNA only functioned inside the cell and assumed that if RNA ‘leaked’ out, enzymes in the blood would destroy it. However, researchers have found that cells in fact intentionally ‘export’ RNA.

To survive outside the cell, exRNA travels in its own molecular containers that prevent enzymes from breaking it down before it reaches its destination.

exRNA has been found to be part of a sophisticated long-distance communication system. A cell releases RNA to deliver instructions to another cell elsewhere in the body, changing how it behaves or which genes it activates. This process helps coordinate responses in the immune system, tissue repair, and development. However, cancer cells can also release exRNA to promote tumour growth.

The discovery of exRNA changed modern medicine. For instance, just by testing a patient’s blood or other body fluids, doctors can identify specific RNA patterns linked to cancer or heart disease.

DreamIAS