



CURRENT AFFAIRS FOR UPSC

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DreamIAS



INTERNATIONAL

JIMMY CARTER, THE 39TH AND LONGEST-LIVED US PRESIDENT, DIES AT 100

Jimmy Carter, who served as the 39th President of the US, passed away Sunday in his home in Plains, Georgia, The Carter Centre announced. He was 100.

- Carter, who served as the president from 1977 to 1981, lived longer than any president in the history of the US.
- During his tenure as the president, from January 1977 to January 1981, he faced multiple challenges related to foreign policy. The Democrat leader was defeated in 1981 during his re-election bid by Ronald Reagan, a Republican.
- In 2002, the former US president was awarded the Nobel Peace Prize as he is credited with easing nuclear tensions between North Korea and South Korea, a US invasion of Haiti was averted due to his efforts and Carter negotiated ceasefires in Bosnia and Sudan.
- Born Oct. 1, 1924, Carter was raised in the mostly Black community of Archery, just outside Plains, by a progressive mother and white supremacist father. Their home had no running water or electricity but the future president still grew up with the relative advantages of a locally prominent, land-owning family in a system of Jim Crow segregation.

Do You Know:

- AT THE imposing Rezang La War Memorial in Gurgaon's Sector 23, a group of men gathered to pay floral tributes to a framed portrait of former United States President Jimmy Carter on Monday.
- In bidding goodbye to Carter, who died at the age of 100 on Sunday, they remembered the man who gave their nondescript village more than just a sliver of international fame — its moniker, Carterpuri Village.
- Yadav said his grandfather was the Lambardar of Daulatpur Nasirabad, which was renamed Carterpuri Village in honour of the 39th US President's visit over four decades ago. "My grandfather had welcomed Carter to the village during his visit on January 3, 1978," he said.
- Though Carter was the third US President to visit India, he holds a soft spot in the hearts of the residents of Carterpuri Village for his visit in 1978.
- Mahipal Singh, 50, who owns a cable business, said Carter's mother did a lot of humanitarian work in the area. "At that time, diseases like malaria and chickenpox were spreading like an epidemic," he said.

TROUBLED WATERS

Emboldened by his victory in the U.S. presidential polls, Donald Trump has drummed up his rhetoric of belligerence by announcing plans to annex Canada and Greenland and retake control of the Panama Canal. While the U.S. has not historically shied away from coveting the two northern territories, threatening to renege on a deal that ceded Washington's control of the canal to Panama has been strictly the brainchild of the President-elect.



Panama Canal is an 82-km-long strategic waterway that connects the Pacific and Atlantic Oceans. It helps ships do away with the need to go around the South American tip of Cape Horn, saving 13,000 km and days of journey. Consequently, the canal facilitates the passage of over 14,000 ships a year.

The 78-year-old Republican first spelt out his plans for the canal during a speech at a Conservative event in Arizona and subsequently on his social media platform Truth Social. “We’re being ripped off at the Panama Canal like we’re being ripped off everywhere else,” he said, referring to the increased shipping rates, on December 22. Mr. Trump also warned of the growing “Chinese influence” in the region. Later, Mr. Trump posted a photo on Truth Social of the U.S. flag flying over the narrow waterway in the Isthmus of Panama. The caption read “Welcome to the United States Canal”.

In its response, the Central American nation said, “Every square meter of the Panama Canal and the surrounding area belongs to Panama and will continue belonging (to Panama).”

Mr. Trump’s grief in the matter is understandable for the U.S., whose ships constitute 74% of the traffic in the canal, is its biggest benefactor, followed by China at 21%. If not for the canal, ships traversing the east and west coasts of the U.S. would have to undertake an additional 22 days of voyage. The canal also came to the aid of the Allies during the Second World War.

What began as a French project in 1880 under the leadership of Ferdinand de Lesseps, who had built the Suez Canal, soon fell apart due to unforeseen difficulties. Americans stepped in to complete the canal but Colombia, which ruled over Panama, did not favour the idea. By orchestrating independence from Colombia, then U.S. President Theodore Roosevelt secured a deal whereby Panama gave his country control over a 16-km wide strip of land to build the canal in exchange for monetary compensation.

Lock technology

The canal entered into operation in 1914. By using a technology comprising a series of locks, it revolutionised shipping. However, a dispute over the ownership and administration soon broke out between the U.S. and Panama, which eventually led to a direct clash in 1964. In 1977, then President Jimmy Carter and Panama’s military leader Omar Torrijos signed two treaties — the Permanent Neutrality Treaty and the Panama Canal treaty that saw the U.S. hand over the control of the canal to Panama in 1999.

The former agreement grants the U.S. the authority to ensure the canal remains free and open without giving it the power to interfere in Panama. The latter ensured that Washington transferred the canal to Panama by December 31, 1999.

Since 2000, Panama has overseen the administration of the canal. However, the region, one of the wettest until recently, experienced a rainfall deficit in 2022. Gatun Lake, which provides the 200 million litres of water needed for each ship to transit the canal, experienced a drop in water levels, prompting authorities to increase shipping charges starting in 2025. Mr. Trump has objected to this.

His allegation of Chinese influence pertains to the Hong Kong-based company C.K. Hutchison Holdings, which manages two of the five ports in the region — one on each side of the canal. Bolstering his claim further was Panama’s 2017 decision to cut ties with Taiwan.



Growing tensions between the U.S. and Panama might not align with Mr. Trump's top policy priorities such as stopping illegal migration from South America, warn experts.

FORCE OF IDEAS

The truck attack in the French Quarter of New Orleans, on New Year's Day, killing at least 15 people and wounding 30, suggests that the threat of low-tech, lone wolf attacks has not gone away. The attacker, identified as 42-year-old Shamsud-Din Jabbar, an American citizen who had served in the military, was killed in a shoot-out. Police found an Islamic State (IS) flag and explosives in his truck. Just hours earlier, Jabbar had posted videos on social media, indicating that he was inspired by the IS. In recent months, the IS, a terrorist organisation founded in Iraq and Syria, and now present across geographies, has released propaganda videos asking its "soldiers" to strike during celebrations in western cities in the holiday season. A few hours after the New Orleans attack, a Tesla Cybertruck exploded in front of the Trump International Hotel in Las Vegas, killing at least one person and injuring several. Police later said Jabbar, the suspected New Orleans attacker, did not act alone, and are investigating any potential link between the truck attack and the cybertruck explosion.

The IS, which lost its physical Caliphate in Iraq and Syria, has been trying to revive its lost fortunes. The terror group survived as an insurgency, shifted its centre of operations to Afghanistan (Islamic State-Khorasan), where it carries out attacks, targeting the country's Shia minority, and opened new networks in Africa. When the IS was at its peak in 2014-15, it had successfully globalised terror — any sympathiser could hold the IS flag, declare loyalty to the 'Caliph' and unleash attacks against the "infidels". World cities, from Dhaka to Orlando and Istanbul to Belgium, witnessed dozens of IS-inspired attacks. These have ebbed, partly due to the destruction of the IS 'caliphate' and partly due to enhanced security measures and deradicalisation programmes. But now that Syria is in transition following the fall of the Bashar al-Assad regime, the IS is trying to rebuild itself. Kurdish fighters in Syria's east, who played a pivotal role in defeating the Islamists in 2015-16, say IS militants have looted government weapons' depots and are preparing for a comeback. The New Orleans attack should serve as a warning signal for the U.S. The IS should not be allowed to regain a foothold in conflict-ridden West Asia. Besides, the U.S. should also get to the roots of the radicalisation of American citizens and counter it. Organisations such as the IS should be fought with both force and ideas.

STAY OUT

The inauguration of Mikheil Kavelashvili, a former football player, as the President of Georgia, could deepen the political crisis in the Caucasian country which has seen back-to-back street protests and crackdowns. Mr. Kavelashvili, a conservative leader and a critic of the West, was opposed by the country's opposition and his predecessor Salome Zourabichvili. Ms. Zourabichvili, who had said earlier that "there would be no inauguration" of Mr. Kavelashvili, announced her leaving office "voluntarily", slamming his swearing in as "a parody". She later joined opposition protests outside Parliament. The latest spell of the crisis goes back to the October legislative elections. The ruling conservative Georgian Dream party, with a foreign policy that was sceptical of the West and a call for stronger ties with Russia and China, won. The opposition, which said the elections were fraudulent, demanded a re-election, but the Georgian Dream went ahead with government formation. Among those who denounced the legitimacy of the elections was the pro-western Ms. Zourabichvili. A sitting President's support for anti-government protests challenging the veracity of the polls was a testimony to the deep political divisions. But undeterred, the ruling



party picked Mr. Kavelashvili as President under a new system of electoral college, consisting of lawmakers from Parliament and other regional and local assemblies.

The crisis in Georgia looks like a political tug of war between a ruling party and its opponents. But the actual situation is more complicated. Georgia, a former Soviet Republic, is strategically important, sharing a border with Russia. In 2008, months after it was promised NATO membership, Russia invaded it in the name of defending two breakaway regions. Leaders in Tbilisi have generally been pro-western. But this trend changed with the rise of Georgian Dream, founded in 2012 by billionaire businessman Bidzina Ivanishvili. Tbilisi's rapprochement with Moscow was not received well in western capitals. When allegations of election fraud emerged, the West immediately backed the opposition. In November, amid tensions with the West, the Georgian government suspended talks to join the EU until 2028, triggering more street protests, reminiscent of the 2014 pro-western Maidan protests in Ukraine. Last week, the U.S. imposed sanctions on Mr. Ivanishvili. Georgia's rulers say the West is pushing the country into a conflict with Russia which they do not want. They also point out that the country's Constitutional Court has rejected a lawsuit filed by Ms. Zourabichvili, seeking the annulment of the election results. Georgia's politicians should resolve the differences among themselves. They should be mindful of the tragedy of Ukraine and seek common ground in bringing the political crisis to an end. The best external players can do is to stay out of Georgia's politics.

DANGEROUS SKIES

The crash of an Azerbaijani airliner near the Kazakhstani city of Aktau that killed 38 people has again brought into focus the danger of flying over the Russia-Ukraine conflict zone. The Embraer 190 was en route from Baku to Russia's Grozny when it was diverted and attempted an emergency landing some kilometres from Aktau. While initial fears centred around a bird hit, government and media reports have increasingly pointed at a misguided Russian anti-drone attack on the plane. Holes in the plane and videos of oxygen masks releasing would indicate depressurisation. The aircraft was still airborne after the attack, eventually crossing the Caspian Sea on the east, a distance of some 300 miles as the crow flies. Reports talk about the plane's control system being damaged, which would possibly explain its loopy flight paths, and permission being denied to the damaged aircraft to land in nearby airports although norms would allow a damaged civilian plane to land anywhere close. The Cockpit Voice Recorder and the Digital Flight Data Recorder have been recovered, which would reveal much information. Azerbaijan has sovereignty over the flight and the Brazilian manufacturer, Embraer, would also be party to the multi-stakeholder investigation that would reveal the cause of the accident, the course of events, and whether and how the control systems of the flight were affected. The last would indicate the role, if any, played by jamming systems that are part of air and drone defence.

Azerbaijani and U.S. officials have blamed Russian air defence systems responding to a Ukrainian attack likely with drones. Russian President Vladimir Putin apologised to Azerbaijani President Ilham Aliyev "for the fact that the tragic incident occurred in Russian airspace". In this half-hearted apology, he stopped short of acknowledging active Russian involvement or that it was collateral damage to Azerbaijan, a Russian ally. That the plane was damaged nearly 500 miles from the Ukrainian border has shown the state of warfare today, in which drones and microdrones have moved centrestage as low-cost weapons capable of strikes and surveillance across broad swathes of enemy territory causing much damage deep inside enemy territory. If the Kazakhstan air crash calls for one urgent response, it is for the de-escalation of military action in the region, the success of which would depend preponderantly on Moscow's willingness to end its invasion of Ukraine



and an agreement on limiting the expansion of NATO. Failure to do so now risks not only collateral damage resulting in such avoidable loss of innocent lives, but could also see more regional actors getting pulled into the conflict.

RUSSIAN OFFICIALS IN CRIMEA DECLARE EMERGENCY AS OIL SPILL REACHES SEVASTOPOL

Russia officials in Crimea announced a regional emergency on Saturday, as oil was detected on the shores of Sevastopol, the peninsula's largest city.

- Fuel oil spilled out of two storm-stricken tankers nearly three weeks ago in the Kerch Strait, close to eastern Crimea – some 250 km from Sevastopol, which lies on the southwest of the peninsula.
- “Today a regional emergency regime has been declared in Sevastopol,” regional Gov. Mikhail Razvozhaev wrote on Telegram. Oil was found on four beaches in the region and was “promptly eliminated”,
- Razvozhaev’s announcement came after authorities in Russia’s southern Krasnodar region announced a region-wide emergency last week, as the fuel oil continued washing up on the coastline 10 days after one tanker ran aground and the other was left damaged and adrift on December 15.

Do You Know:

- The Kerch Strait runs between the Black Sea and the Sea of Azov and separates Crimea’s Kerch Peninsula from Russia’s Krasnodar region.
- Oil spills affect marine life by exposing them to harsh elements and destroying their sources of food and habitat. Further, both birds and mammals can die from hypothermia as a result oil spills, according to the US National Oceanic and Atmospheric Administration (NOAA). For instance, oil destroys the insulating ability of fur-bearing mammals, such as sea otters. It also decreases the water repellency of birds’ feathers, without which they lose their ability to repel cold water.
- There are a few ways to clean up oil spills. including skimming, in situ burning and by releasing chemical dispersants. Skimming involves removing oil from the sea surface before it is able to reach the sensitive areas along the coastline. In situ burning means burning a particular patch of oil after it has concentrated in one area.
- Releasing chemical dispersants helps break down oil into smaller droplets, making it easier for microbes to consume, and further break it down into less harmful compounds.
- Natural actions in aquatic environments such as weathering, evaporation, emulsification, biodegradation and oxidation can also help reduce the severity of an oil spill and accelerate the recovery of an affected area. But these occur differently in freshwater and marine environments, the Environmental Protection Agency (EPA) notes in a report on oil spills.

UKRAINE HALTS TRANSIT OF RUSSIA’S GAS INTO EUROPE, ENDS ITS SUPPLY DOMINANCE

Russian natural gas exports via Soviet-era pipelines running through Ukraine to Europe were halted in the early hours of New Year’s Day as a transit deal expired and warring Moscow and Kyiv have failed to reach an agreement to continue the flows.



- The shutdown of Russia's oldest gas route to Europe ends a decade of fraught relations sparked by Russia's seizure of Crimea in 2014. Ukraine stopped buying Russian gas the following year.
- The stoppage of gas flows was expected amid the war, which started in February 2022. Ukraine has been adamant it would not extend the deal amid the military conflict.
- According to an industry source, Gazprom last year assumed the absence of gas transit via Ukraine, which accounted for roughly half of Russia's total pipeline gas exports to Europe.
- Russia still exports gas via the TurkStream pipeline on the bed of the Black Sea. TurkStream has two lines – one for the Turkish domestic market and the other supplying central European customers including Hungary and Serbia.
- The European Union redoubled its efforts to reduce its dependence on Russian energy after the outbreak of the military conflict in Ukraine in 2022 by seeking alternative sources.

Do You Know:

- Moldova, once part of the Soviet Union, is among the countries worst affected. It says it will now need to introduce measures to reduce its gas use by a third.
- The five-year gas transit deal between Russia and Ukraine expired early on Jan 1.
- Russia and the former Soviet Union spent half a century building up a major share of the European gas market, which at its peak stood at around 35%, but the war has all but destroyed that business for Gazprom.
- The Yamal-Europe pipeline via Belarus has also shut and the Nord Stream route across the Baltic Sea to Germany was blown up in 2022.
- Combined, the various routes delivered a record-high 201 billion cubic metres (bcm) of gas to Europe in 2018.
- Russia shipped about 15 bcm of gas via Ukraine in 2023, down from 65 bcm when the last five-year contract began in 2020.

KOREAN DRAMA

Over the decades, South Korea has evolved from a brutal military dictatorship to a pro-business democracy. But this journey has also been bundled with controversies involving corruption, abuse of power and political vendetta. The impeachment of the acting President, Han Duck-soo, who took charge a few days earlier following the impeachment vote against President Yoon Suk Yeol, exemplifies the vulnerabilities in the political system. Governance has been in a paralysed state ever since Mr. Yoon became President in 2022. While he won on a thin margin, the opposition Democratic Party took control of the National Assembly. Controversies and scandals followed and his approval rating tanked to below 20%. In April this year, the Democratic Party won the legislative election again, widening its lead in Parliament. As the chasm between the presidency and the opposition-controlled National Assembly widened, Mr. Yoon declared martial law earlier this month, which triggered instant protests from political quarters and the public. In a country that still keeps the dark memories of its not-so-distant military dictatorships, his move was seen as an extreme measure aimed at torpedoing its democracy. He was impeached and Prime Minister Han stepped in as the interim leader. But his tenure has also proved short-lived.



This is the first time South Korea is impeaching an interim leader. The crux of the dispute was Mr. Han's refusal to appoint three judges to fill vacancies at the nine-member Constitutional Court. According to South Korea's Constitution, a President will be stripped of powers as soon as they are impeached in Parliament but to remove them from office, at least six judges in the Constitutional Court should rule in favour of the impeachment. The opposition accused Mr. Han of delaying the constitutional process, while Mr. Han and the ruling People's Power Party argued that only an elected President has the powers to sign off appointments for the Constitutional Court. This would mean that the political and constitutional crisis is expected to persist for the foreseeable future at a time when South Korea is grappling with economic woes and also security challenges from the North. A prolonged crisis and paralysis in governance could also weaken the political institutions and empower anti-democratic forces which were in power until the late 1980s. This is perhaps the deepest crisis South Korea is facing since its transition into a democracy. Its fractious political class should prioritise constitutional stability over narrow political interests. The new acting President should strive for consensus with the key parties on appointments to the Constitutional Court and expedite the impeachment proceedings against Mr. Yoon.

HOW DO THE HOUTHIS OF YEMEN FIGURE IN IRAN'S 'AXIS OF RESISTANCE' AGAINST ISRAEL?

Israel bombed several places in Yemen on Thursday, including the airport in Sana'a, where a high-level United Nations delegation led by World Health Organization Director General Tedros Adhanom Ghebreyesus was present.

- Israel began directly striking the Houthi (Ansar Allah) militant group in Yemen last week, expanding its ongoing campaign against Iran and the so-called "axis of resistance".
- Israeli war jets have carried out such long-distance operations earlier, flying more than 2,000 km for example, during its Operation Long Arm in response to a Houthi drone attack in July, which disrupted humanitarian operations at the Yemeni port of Hodeida.
- The scale of the ongoing strikes is wider, and the bombing of Sana'a is a first. With the capabilities of Hamas and Hezbollah severely degraded but with the Houthis continuing to succeed in direct attacks, Israelis have been debating whether to focus on the "last remaining Iranian proxy" in Yemen or to go after Iran itself.
- The Houthis have long had an interest in fighting the US (which supported Saudi Arabia in its war against the Tehran-backed group) and Israel. While the tactical necessities of the civil war, ongoing since 2014, kept the Houthis focused on Yemen, by October 7, 2023 – the day of the Hamas attacks on southern Israel – they were at an interesting juncture.
- Following the October 7 terrorist attacks, as Israel began its bombardment of Gaza, the Houthis declared their casus belli as stopping Israel and deterring America. At that point, they were a group that had not only survived a 10-year civil war and high-casualty Saudi and Emirati air strikes, but one that had begun to project, from 2021 onward, a certain permanence. Indeed, the US had in a show of pragmatism lifted the Foreign Terrorist Organisation (FTO) tag from the Houthis that year. (The Biden Administration redesignated them in January 2024.)
- Exploiting the window of opportunity to increase their profile, the Houthis first mounted a cruise/ ballistic missile and drone campaign against Israel, before shifting their attacks to the



maritime domain by December 2023. They benefited not only from Iranian military aid and supply, but also Russian targeting intelligence. And they have remained defiant in the face of the fresh Israeli air strikes.

- The Houthi stock in Iranian overseas operations continued to rise through 2024, especially as Israel significantly weakened Hezbollah and Hamas, and the fall of the Bashar al-Assad regime in Syria severed Tehran's lines of communication with Lebanon.
- December may be seen as having injected a stronger instinct of self-preservation into the weakened Iranian axis – even as Iranian government officials themselves write editorials in The Economist and Foreign Affairs signaling openness to engaging the West. The Houthis are currently the spearhead of the axis against Israel, with the Hashd enabling that effort, even as they keeps their own distance from the war, at least for now.

Do You Know:

- The Houthis are a large clan belonging to the Zaidi Shia sect, with roots in Yemen's northwestern Saada province. Zaidis make up around 35 per cent of Yemen's population.
- The Zaidis ruled over Yemen for over a thousand years until 1962, when they were overthrown and a civil war followed, which lasted until 1970. The Houthi clan began to revive the Zaidi tradition from the 1980s, resisting the increasing influence of the Salafists, who were funded by the state. The unprecedented success in the Red Sea and the renewed American focus on destroying them have raised the domestic profile of the Houthis.
- Iran, a Shia-majority country, is believed to back the Houthis, even as it has denied the charge. Its regional rival, the Sunni-majority Saudi Arabia (along with Western allies like the US) backs the Yemen government. Houthis' support for Palestine is, therefore, also a manifestation of existing regional rivalries.

TRINIDAD AND TOBAGO DECLARES EMERGENCY OVER RISING CRIME

THE GOVERNMENT of Trinidad and Tobago, facing an alarming rise in violence, including retaliatory gang killings, on Monday declared a state of emergency. The measure empowers the military to make arrests and allows the authorities to enter suspects homes without warrants and deny them bail.

The state of emergency in the Caribbean country, the first for crime in more than a decade, was announced by the acting attorney general, Stuart Young, at a news conference in Port of Spain, the capital. It comes as the government has been increasingly criticized for failing to stop a wave of gang-related killings. The nation reported 623 homicides so far this year in a country of 14 million.

The national security minister, Fitzgerald Hinds said the killings had become an epidemic and public health concern. The police responded to 33 double, eight triple, four quadruple and one o quintuple homicide this year, he added. No curfew will be set during the state of emergency, nor will people's movements be restricted, Young said as the government wanted to minimize the effects on economic activity. But people suspected of crimes can be stopped and searched by the police or army soldiers, he added.



REFLECTIONS AS THE WORLD GROWS MORE 'POLARISED'

Donald Trump's victory in the 2016 U.S. presidential election prompted contemplation of a "divided" United States in terms of politics and society, bolstered by waves of fake news amid a post-truth era. In his book *Polarization: What Everyone Needs to Know* (2019), academic Nolan McCarty explores the social, economic, and geographic factors that contribute to polarisation in America, walking readers through both what is known and unknown about the causes, evolution, and ramifications of the nation's growing political conflicts.

America has recently appeared to be defined by profound political, cultural, and societal divides as Mr. Trump won a second term in 2024. And along with nine other words, "polarization" was chosen as the 2024 word of the year by Merriam-Webster, the U.S.'s premier dictionary.

The term "polarization" — defined as "division into two sharply distinct opposites; especially, a state in which the opinions, beliefs, or interests of a group or society no longer range along a continuum but become concentrated at opposing extremes" — has become widely used in the media and in public discourse, and has become a significant aspect of modern life. While MSNBC perceived the 2024 presidential election as having left America "more polarized than ever", and Fox News reports that "[Vice-President-elect J.D.] Vance's debate answer on immigration crisis shows voter polarization", Forbes has cautioned that "cultural polarization is becoming a pressing challenge" in workplaces. Indeed, in October, Merriam-Webster stated that new terms such as "far left" and "far right," as well as "MAGA" — the abbreviation for Mr. Trump's divisive "Make America Great Again" movement — would be included in its dictionary in 2024. Vice-President Kamala Harris warned of fascism under Mr. Trump during the heated election, while Mr. Trump used derogatory language and said his opponent was running on "destruction". The election was so divisive that many Americans believed that the other candidate posed an existential threat to the U.S. when they cast their ballots.

About eight out of 10 Harris supporters were very or somewhat concerned that Mr. Trump's beliefs, but not Harris', were too radical, while roughly seven out of 10 Trump supporters felt the same way about Ms. Harris, but not Mr. Trump, according to AP VoteCast, a poll of over 1,20,000 people.

The usage of the word is one aspect that is not polarised. According to Peter Sokolowski, editor at large for Merriam-Webster, "it's something that actually everyone agrees on," to put it in a slightly sardonic way. However, "polarization" has more than only political meanings. The controversy over Taylor Swift's use of a private jet and the Drake-Kendrick Lamar feud (they are rappers) are perceived to be polarising.

"Polarization" refers to beyond America also. Globally, centrist policies are being destroyed. Maybe Emmanuel Macron, the centrist French leader, or Olaf Scholz, the centre-left German leader, can better attest as to what it means if society is increasingly polarised. The insanity of the "other side" — in our politics, at work, or at home — confounds us. Even the "us vs. them" rift may frequently be trembling a political society such as ours.

A germination that began much earlier

However, to believe that polarisation is as recent as Mr. Trump's presidency or that Trump or Trump-like individuals are to blame for today's polarised world would be a grave mistake. The seeds were sown a long time ago. Although it is evident from the current political environment



that extreme viewpoints are growing in popularity, McCarty contended that these divisions have been developing for several decades and are firmly anchored in the way politics and society are structured.

For instance, American culture has seen significant transformation in recent decades, from changing social group relationships and language and behavioural standards to the rising importance of a college degree. In fact, the 1950s-60s civil rights struggles influenced the partisan culture conflicts of today. And decades before the parties' split on these issues, opinions regarding civil rights were already associated with a variety of other culture war beliefs — much earlier than previous scholarship realised. However, since the 1970s, income and wealth disparities have increased dramatically, which has exacerbated existing polarisation.

In the modern context

In recent years, there has been a notable technological revolution. Thus, “polarization” in the modern world can also be viewed through the prism of the shifting global order brought about by social media, the Internet, and artificial intelligence. Yes, Professor Chris Bail critically investigated the underlying causes of political tribalism on social media in his book, *Breaking the Social Media Prism* (2021). It raises an interesting question: do our social media networks impact people's political views? Or do people's political views shape our networks?

Prof. Bail's research highlights how today's political polarisation is exacerbated by the widening gap between social media and in-person encounters. His analogy of social media as a prism refracting, rather than mirroring, perfectly captures how it can skew how people see themselves and other people.

And the AI genie also continues to transform social media and our way of life. The “us vs. them” drift grows as society, politics, and culture descend further into the rabbit hole, rendering the world more and more polarised.

A CRISIS TO THE WEST

In August 2021, there was a barely disguised triumphalism in Rawalpindi and Islamabad after the US withdrawal from Afghanistan and the swift takeover of the country by the Taliban. Then PM Imran Khan had said that the Taliban's return marked the Afghan people “breaking the shackles of slavery” and there was talk from senior members of the government about the “creation of a new bloc” in the region. The clashes between the two countries on Pakistan's western border — Afghanistan retaliated with strikes across the Durand Line after Pakistan targeted what it called hideouts for militants in the former — mark a deterioration of ties and the deepening of instability in an already volatile region.

There has been an intensification of insurgencies in both Balochistan and Pashtun territories. The Pakistan Army, which has long fostered militant groups to deploy against India, faces significant challenges to its authority. It has accused Kabul of sheltering the Tehrik-e-Taliban Pakistan (TTP) and trying to foment insurgency in parts of Pakistan. The Taliban does not recognise the Durand Line — it continues to refer to it as “hypothetical”. The Pashtun people continue to suffer at the hands of extremists and Rawalpindi's counter-terrorist operations. The Pakistan state's refusal to engage with the Pashtun Tahafuz (self-respect) Movement (PTM) — the organisation was banned earlier this year — and take seriously the grievances of the community only make a peaceful, constructive dialogue more difficult. The fact is that at the current moment, the Pakistan Army



and the government have their backs to the wall. The country has gone through a sustained economic crisis, and the insurgency in Balochistan is a threat to the security of Chinese-backed projects. It has also had border clashes with Iran.

For long, the Pakistan state has sought “strategic depth” on its western front vis-avis its conflict with India. At a time when the focus must be on economic reforms and expanding state capacity, the army seems to be sinking deeper into the morass of its own making. Land-locked Afghanistan, facing sanctions and with a regime that is not officially recognised by much of the world may need Islamabad’s support for the time being. However, Rawalpindi and Islamabad would be ill-advised to underestimate the depth of the grievances of the Pashtun, who have suffered for the better part of five decades. Military force can only be one aspect of dealing with an insurgency. The degree of maturity with which Pakistan deals with the current unrest and violence will be watched closely in New Delhi. That may well be among the defining elements for both regional security and bilateral ties.



DreamIAS



NATION

WHY WILL INDIA'S FOREIGN POLICY BE A TIGHTROPE WALK?

The story so far:

After Prime Minister Narendra Modi was sworn in for a third time in June, the year was jam-packed with incoming and outgoing visits. Above all, 2024 was full of global insecurity and shocks in the neighbourhood, particularly Bangladesh. As 2025 looks to be even more uncertain, Indian foreign policy's biggest challenge is to remain poised for change.

What were the high points in India's external relations?

The most difficult negotiation completed this year was for disengagement at the Line of Actual Control with China. While restoring ties and rebuilding the trust shattered by the Chinese PLA's transgressions since 2020 is a more prolonged task, the first formal Modi-Xi Jinping meeting in five years at Kazan was a turning point.

The year began with a visit from French President Emmanuel Macron as a guest on Republic Day and a reaffirmation of the dependability of bilateral ties. Early in 2024, the conclusion of the India-European Free Trade Association agreement, India's first with Europe, was heralded as a template for India to complete other such negotiations, although the year ended without similar progress on FTAs with Australia, the U.K., and the European Union.

The neighbourhood was also the subject of some bright spots, including the attendance of leaders of most of the neighbouring countries for Mr. Modi's swearing-in. Pakistan wasn't invited, but External Affairs Minister S. Jaishankar made the first such visit in nearly a decade to Islamabad for the SCO summit. Several visits by the Bhutan King Jigme Khesar Namgyel Wangchuck and Prime Minister Tshering Tobgay as well as Mr. Modi's visit to Thimphu to receive an award, and successful visits by the new Sri Lankan President Anura Kumara Dissanayake and Maldives President Mohamed Muizzu, setting aside the tensions earlier, were other high points of the year.

What kept South Block awake at night in 2024?

The transformation of Bangladesh, from a friendly neighbour and most important connectivity partner under Prime Minister Sheikh Hasina, to becoming estranged over her ouster from power in August was the year's biggest shock for New Delhi.

Ties with Canada took a turn for the worse as Canadian authorities doubled down on allegations that Indian officials had ordered the Nijjar killing, even naming Home Minister Amit Shah in the alleged conspiracy. New Delhi dealt with Canada by slamming its doors shut on PM Justin Trudeau, with the hope a new government will be elected there in 2025. But it wasn't easy to do the same with the U.S., where the Department of Justice filed indictments against the Adani group and a new indictment against an Indian official for the alleged Pannun assassination plot. The U.S.'s role in the South Asian neighbourhood, and China's forays into Nepal and other neighbours are a continuing challenge. However, the election of U.S. President Donald Trump and the largely pro-India team he has picked could be a breather.



How did Indian foreign policy navigate global conflict?

Mr. Modi's visits to Russia and Ukraine within weeks of each other raised speculation that he would play mediator in future negotiations. There were no high-level visits from or to Israel, and Mr. Modi made a point of meeting Palestinian PM Mahmoud Abbas at the UN. While New Delhi repeatedly called for an end to the civilian casualties, it continued to hedge its position at the UN on resolutions seeking to bring Israel to account for the killing of more than 45,000 in Gaza. With multilateral initiatives like IMEC (India-Middle East Europe-Economic Corridor) and I2U2 (India, Israel, UAE and U.S.) in trouble, India sought to engage West Asian countries bilaterally. In 2025, a more difficult tightrope walk for South Block is expected between Iran and the Israel-U.S. combine.

What's on the diplomatic calendar in 2025?

Mr. Jaishankar's year-end visit to Washington and meetings with the Trump transition team indicate that ties with the U.S. will be a priority in 2025. Mr. Trump is expected to visit India for the Quad Summit next year. 2025 is expected to begin with a ministerial visit from Iran, followed by U.S. NSA Jake Sullivan for a last-moment iCET (Initiative on Critical and Emerging Technology) meet.

Indonesian President Prabowo Subianto will be the Republic Day guest. All eyes will be on Russian President Vladimir Putin's visit to Delhi, his first since the war began, expected to be finalised early in 2025.

INDIANS AND THE H-1B VISA

Weeks before he returns as US President, Donald Trump's supporters are locked in a public row about skilled immigration and H-1B visas.

- Much of the election-time anti-immigration rhetoric focused on low-skilled labour migration. Besides the intrinsic racism, this rhetoric is fuelled by the belief that such immigration depresses wages, and takes away jobs that would have otherwise gone to the American working class — which has long been hit by high unemployment, low wages, inflation, a housing crisis, and other economic problems.
- The current controversy involves many of the same themes as Trump's "Mexicans-are-stealing-American-jobs" rhetoric — only this time in the context of immigration into the US of skilled personnel for higher paying jobs.
- The H-1B visa program allows American employers to hire immigrant workers in occupations that require "a high level of skill" and "at least a bachelor's degree", according to the US Department of Labour.
- The program was started in 1990, with the intention of helping "employers who cannot otherwise obtain needed business skills and abilities from the US workforce by authorising the temporary employment of qualified individuals who are not otherwise authorised to work in the United States".
- An H-1B visa can be issued for a maximum of six years at a stretch, after which the visa holder has to either leave the US for a period of at least 12 months before returning, or apply for and receive permanent residence ("Green Card").



- Currently, there is an annual numerical limit (regular cap) of 65,000 new statuses/ visas under this program each fiscal year, with an extra 20,000 visas available to those with a master’s degree or higher from a US university.
- However, not all H-1B petitions are subject to the annual cap. The number of petitions approved by the United States Citizenship and Immigration Services, a part of the US Department of Homeland Security, is thus far higher than the annual cap. Notably, petitions for “continuing employment” do not fall under the cap.

Do You Know:

- People born in India are the largest beneficiaries of the H-1B program. Data from the US government show that Indians account for more than 70% of all H-1B petitions approved each year since 2015. People born in China come a distant second, hovering at the 12-13% mark since 2018.

FOR KERALA NURSE ON YEMEN DEATH ROW, HOPE HANGS ON A THREAD — PARDON FROM VICTIM’S KIN

With Yemen President Rashad al-Alimi approving the death sentence for 37-year-old Indian nurse Nimisha Priya, for her family in Kerala, any hope of reprieve now hangs by a thread – a pardon from the family of Talal Abdo Mehdi, the Yemeni citizen whose murder she has been convicted of.

- Nimisha was awarded a life sentence in 2020 after she was convicted of killing one Talal Abdo Mahdi in 2017. Nimisha has accused Mahdi of fraud and abuse.
- According to the prosecution’s case, Nimisha, who worked as a nurse in Yemen, allegedly murdered Talal in July 2017 by “injecting him with sedatives to get her passport that was in his possession”.
- Samuel Jerome Baskaran, a social worker who is currently involved in the negotiations with government officials in Yemen and Talal’s family, told The Indian Express that the President’s order reached the prosecutor on Monday, December 30.
- On December 31, the Ministry of External Affairs said it would extend “all possible help” to Nimisha. Since April, Nimisha’s mother Prema Kumari, a domestic worker in Kochi, has been camping in Yemen.
- In December last year, Kumari had approached the Delhi High Court to secure an exemption from the travel ban to conflict-ridden Yemen. Since her arrival in Sanaa, Kumari has had a few meetings with Nimisha in prison, Samuel said.

Do You Know:

- According to Islamic law, victims of crimes have a say in how criminals are punished. In cases of murder, this principle applies to the families of victims. Although murder is punished via the death penalty, the victim’s family (specifically, heirs) may choose to “forgive” the murderer in exchange for monetary compensation.
- This is the principle of diyya, or “blood money”. It can be traced to the Holy Quran: “O believers! The law of retaliation is set for you in cases of murder — a free man for a free man, a slave for a slave, and a female for a female. But if the offender is pardoned by the victim’s guardian, then



'blood money' should be decided fairly and payment should be made courteously. This is a concession and a mercy from your Lord." [2:178]

- Scholars believe that the idea behind this is to encourage the virtue of forgiveness, while also providing reparative justice to the victim's family. The scriptures do not set any specific amount as compensation, with the sum generally arrived at via negotiation between the murderer's family/representatives and the victim's family. Some Islamic countries, however, have set minimum compensation amounts.

- In November 2023, a \$40,000 payment was made to get negotiations started. Priya's family will likely have to pay up to \$400,000 to waive the death penalty. The 'Save Nimisha Priya International Action Council', formed in 2020, is in the process of raising the required funds.

INDIA 'PROTESTS' CHINA'S NEW COUNTIES IN LADAKH

Beijing forms two new counties in Hotan prefecture that incorporate Ladakhi territory; MEA says India has 'never accepted illegal Chinese occupation', raises 'concerns' over dam project as well

India has lodged a "solemn protest" with China over the formation of two counties in the Hotan prefecture that incorporates territory of India's Ladakh.

Speaking to reporters during the weekly briefing on Friday, Ministry of External Affairs (MEA) spokesperson Randhir Jaiswal reminded China that India "never accepted" Beijing's "illegal occupation of Indian territory in this area".

He further stated categorically that India has also conveyed its "concerns" about the building a mega hydro power project in the upstream Yarlung Tsangpo, which is the Tibetan name of Brahmaputra, that flows through Arunachal Pradesh and Assam.

The protest from the Indian side came after Chinese news agency Xinhua reported on December 27, 2024 that the authorities in northwest Xinjiang Uyghur Autonomous Region had declared the formation of He'an County and Hekang County, in the Hotan prefecture. The Hotan prefecture contains parts of Aksai Chin that India accuses China of occupying and formation of the two new counties appears like Beijing firming up administrative measures in the region.

The protest from the Indian side is significant as it comes against the backdrop of the December 18, 2024 meeting between the Special Representatives for the border mechanism — National Security Adviser Ajit Doval and Chinese Foreign Minister Wang Yi.

The meeting is to resolve the tension that erupted in eastern Ladakh in June 2020 that has since been termed the 'Galwan clashes'.

In another significant turn, Mr. Jaiswal categorically spelt out India's concern on the announced mega dam project over Yarlung Tsangpo in the deep gorges of the eastern Himalayas that fall under Chinese control. "As a lower riparian state with established user rights to the waters of the river, we have consistently expressed, through expert-level as well as diplomatic channels, our views and concerns to the Chinese side over mega projects on rivers in their territory," said Mr. Jaiswal.

The Chinese authorities have approved the construction of the hydel power project in the lower reaches of Yarlung Tsangpo. The mega dam is designed to be the largest infrastructure project in the world. Once constructed, the gigantic dam would dwarf even the Three Gorges Dam. The MEA



spokesperson hinted that the announcement of the dam was not communicated to India through official channels as is the norm in the case of neighbours sharing major rivers and said the MEA got to know the information through a news report by Xinhua. India's view, Mr. Jaiswal said, was "reiterated, along with need for transparency and consultation with downstream countries, following the latest report."

NIGERIANS TOP LIST OF DEPORTED IN 2023-24: HOME MINISTRY DATA

The highest number of foreigners deported from India were from Nigeria, followed by Bangladesh and Uganda, the Union Home Ministry said in its annual report for 2023-24.

A total of 2,331 foreigners were deported by the Foreigners Regional Registration Officers (FRROs) from April 1, 2023 to March 31, 2024. Of these, 1,470 people belonged to Nigeria, 411 people were from Bangladesh and 78 belonged to Uganda. The FRRO maintains the records of foreigners who enter India on valid documents. The deportation can be for overstaying the visa and flouting visa conditions among others.

During the same period, 1,112 Long-Term Visas (LTV) were granted by the Home Ministry for minority communities from Pakistan. LTVs, ranging from a year to five years, are precursors to citizenship.

Since 2019, all citizenship applications are being processed online and between April 1, 2023 and March 31, 2024, a total of 1,699 citizenship certificates have been granted by the Union as well as State governments. The Home Ministry has delegated powers to State government officials in 31 districts in nine States to grant citizenship to foreigners under the provisions of the Citizenship Act, 1955. "Out of this, 1,278 were granted by registration under Section 5 and 421 were granted by naturalisation under Section 6 of the Citizenship Act, 1955," the report said. The data does not reflect the number of citizenship certificates granted under the Citizenship (Amendment) Act, 2019 (CAA).

Around 98 lakh foreigners visited India during the period and the highest number of visitors were from Bangladesh (21,08,734), followed by United States of America (17,37,549), United Kingdom (9,86,954), Australia (4,72,913), Canada (4,00,417), Sri Lanka (2,85,664), and Malaysia (2,80,578), Germany (2,39,271), Nepal (2,02,197) and Singapore (2,00,708).

DRUGS, SCAMS AND SIN: MYANMAR'S CIVIL WAR HAS MADE IT THE GLOBAL CRIME CAPITAL

THE FLOWER fields stretch out from the mountain village along most every road-fluttering patchworks of white and pink and purple.

The beauty in this corner of Shan state, in northeastern Myanmar, might seem a respite from the country's brutal civil war. Instead the blooms are a symptom: it is all opium poppy in these fields, and Myanmar again ranks as the world's biggest exporter of the raw material to make heroin and other opiates. And that's just the beginning.

Since descending into a full-blown civil conflict nearly four years ago, after the military overthrew the elected government, Myanmar has cemented its status as a hotbed of transnational crime. It is a playground for warlords, arms dealers, human traffickers, poachers, drug syndicates and



generals wanted by international courts. Myanmar is now the biggest nexus of organized crime on the planet, according to the Global Organized Crime Index.

The criminality flourishing in Myanmar's fertile soil carries disastrous consequences for its 55 million people. It is also spreading the fruits of transgression across the globe. With more than half of the country battle-struck after the military coup in February 2021 that unseated the civilian authority of Aung San Suu Kyi, Myanmar is racking up dubious superlatives.

It is now the world's largest producer of opium and one of the world's largest manufacturers of synthetic drugs, including methamphetamine, ketamine and fentanyl. Concocted with precursor chemicals from neighbouring China and India, tablets made in Myanmar feed habits as far away as Australia. With factories in overdrive and international law enforcement overwhelmed, street prices of these drugs are alarmingly cheap.

Myanmar is not just a narco-state. It is also thought to be the world's largest exporter of certain heavy rare earth elements that power clean energy worldwide. Workers dig in illegal mines, then dispatch the rare earths to China along old smuggling routes. The Southeast Asian nation is also home to the best jade and rubyon the planet, much of it extracted by young men addicted to the same drugs that are flooding the global market.

The war in Myanmar is expanding the reach of Chinese crime syndicates operating with impunity and monopolistic ambition in the region, despite occasional crackdowns by China.

In Myanmar's borderlands, criminal networks that unite Chinese kingpins with ethnic warlords are kidnapping people from all over the globe to toil in factories that scam people online.

International police organizations say this online fraud has bilked billions of dollars from retirees and lonely hearts worldwide.

"Organized crime has a vested interest in conflict continuing because it thrives in that environment," said Masood Karimipour, the regional representative for Southeast Asia and the Pacific for the United Nations Office on Drugs and Crime, or UNODC "And the longer the conflict goes on the more territory falls under the control or influence of parties who stand to profit."

ON INDIA'S OBLIGATIONS TOWARDS THE ROHINGYA

The story so far:

A recent study examining the plight of Rohingya refugees detained in India, conducted jointly by The Azadi Project and Refugees International has highlighted "gross violations of constitutional and human rights" and criticised India's "failure to uphold its obligations under international human rights treaties." Based on interviews with detainees, their families, and legal representatives, the report reveals that "a significant number of Rohingya refugees continue to be incarcerated even after serving their prescribed sentences."

How are Rohingya refugees protected under international law?

The Rohingya people of Myanmar constitute the world's largest stateless population, estimated to number approximately 2.8 million. Denied citizenship and subjected to decades of persecution by Myanmar's authorities, majority of the Rohingya have been compelled to flee their homeland due to genocidal violence. At present, they are dispersed across multiple countries. According to the



United Nations High Commissioner for Refugees (UNHCR), nearly 22,500 Rohingya refugees currently reside in India.

The 1951 Refugee Convention and its 1967 Protocol enshrine the principle of non-refoulement, which prohibits States from expelling individuals under their jurisdiction when substantial evidence suggests they would face persecution, torture, or other severe human rights violations upon return. This principle is a cornerstone of human rights, humanitarian, and refugee law. Moreover, its status as customary international law imposes binding obligations on states regardless of formal assent. The Office of the United Nations High Commissioner for Human Rights has reiterated that “the principle is characterised by its absolute nature without any exception”. Additionally, in a 2007 advisory opinion, the UNHCR affirmed that non-refoulement constitutes customary law and is binding on all states, including those not parties to the Refugee Convention or the 1967 Protocol.

What is India’s stand?

As India is neither a signatory to the Refugee Convention nor a party to key international instruments, such as the Convention against Torture and Other Cruel, Inhuman or Degrading Treatment or Punishment and the International Convention for the Protection of All Persons from Enforced Disappearance, it maintains that it bears no legal obligation to provide asylum or adhere to the principle of non-refoulement. India continues to detain Rohingya refugees under archaic domestic legal frameworks, notably the Foreigners Act, 1946, and the Passport Act, 1967. These legislations confer sweeping executive powers to regulate the presence of foreigners and enable authorities to categorise Rohingya refugees as “illegal migrants.”

In response to a public interest litigation (PIL) in the Supreme Court seeking the release of detained Rohingya refugees, the Centre clarified in March that while they are entitled to the right to life under Article 21 of the Constitution, they do not possess the right to reside or settle in India. In 2021, the top court in *Mohammad Salimullah and Anr. versus Union of India*, rejected a plea to prevent the deportation of 170 Rohingya refugees detained in Srinagar accepting the Centre’s national security concerns.

In October 2024, the Delhi High Court dismissed a PIL seeking directions to the authorities to admit Rohingya refugee children in local schools. The court noted that the matter involved international implications and required a policy decision to be taken by the government.

What are India’s international obligations?

The International Covenant on Civil and Political Rights, to which India is a party, implicitly obligates member states under Article 7 to refrain from refouling individuals to places where they may face torture or cruel, inhuman, or degrading treatment. The UN Human Rights Committee has unequivocally affirmed this interpretation. Similarly, the principle of non-refoulement is enshrined in other significant international instruments, including the International Convention on the Elimination of All Forms of Racial Discrimination and the Convention on the Rights of the Child, both of which India has ratified.

Further, the Convention Against Torture makes an express mention of non-refoulement under Article 3. While India’s position as a signatory but not a ratifier renders its provisions non-binding, any deviation from the convention’s principles would compromise the commitment India demonstrated by signing the treaty.



Although India lacks a domestic refugee law, the Supreme Court in landmark rulings such as *Vishaka & Ors. versus State of Rajasthan* (1997) and *National Legal Services Authority versus Union of India* (2014), has affirmed that in the absence of domestic legislation on a matter, international conventions and norms must be applied by municipal courts to ensure the dignity of human life. Additionally, Article 51(c) of the Constitution mandates that the state must strive to promote respect for international law and treaty obligations.

Several High Courts in India have also interpreted the principle of non-refoulement as integral to Article 21 of the Constitution, which guarantees the right to life and personal liberty. Notable examples include the Gujarat High Court's decision in *Ktaer Abbas Habib Al Qutaifi versus Union of India* (1998) and the Delhi High Court's ruling in *Dongh Lian Kham versus Union of India* (2015), both of which involved refugees from different countries seeking protection from deportation.

What are the existing concerns?

The absence of a standardised refugee policy has led to the disparate treatment of different refugee populations, driven by India's shifting geopolitical and diplomatic interests. While groups such as the Tibetans, Sri Lankans, and Afghans are granted refugee certificates or long-term visas by the government, most Rohingya refugees — despite being registered with the UNHCR — often face arbitrary detention and criminal imprisonment. Further, the controversial Citizenship Amendment Act, 2019, excludes persecuted Muslim minorities, such as the Rohingya, from its ambit.

The lack of legal representation and aid for detained Rohingya refugees also poses a severe concern. The report by Azadi Project and Refugees International highlights that civil society organisations working on behalf of Rohingya refugees in India are starved of funding as most Foreign Contribution (Regulation) Act licences that allow for the receipt of foreign funding have been revoked. This has made lawyers reluctant to take on cases involving the Rohingya, fearing potential repercussions.

Moreover, detention centres housing Rohingya refugees, including pregnant women and children, are plagued by dehumanising living conditions. In light of the appalling conditions at the Matia Transit Camp, the Supreme Court in October, directed the Assam State Legal Services to conduct surprise visits and evaluate the conditions in which the refugees are living.

EXPRESS VIEW ON ILLEGAL IMMIGRATION IN INDIA: LOOSE POLITICAL RHETORIC WON'T SOLVE THE PROBLEM

From West Bengal's Mamata Banerjee going off on the BSF's alleged laxness, to AAP's war on illegal Bangladeshi students being admitted to schools, illegal immigration is the issue being raised all across the country. But credible data is the solution to the problem, not harmful and divisive rhetoric

On January 3, addressing an administrative review meeting, West Bengal Chief Minister Mamata Banerjee alleged that the Border Security Force is "letting people enter through Islampur, Sitai and Cooch Behar and other places." Her comments came only days after Delhi Police made several arrests and deported those arrested to Bangladesh through the Foreigners Regional Registration Office (FRRO). Even as the issue of illegal immigrants climbs centre-stage ahead of the Delhi assembly elections — on December 23, 2024, an AAP government circular directed schools to



verify whether children of illegal Bangladeshi migrants are getting admissions — it suffers from the same weakness that characterises it in Bengal: It is high on polarising rhetoric and low on data and coherent policy.

In December 2023, responding to an affidavit on illegal immigration, the central government told the Supreme Court that “it is not possible to give the exact figure”, but “the situation is grim”. On November 6, 2024, responding to an RTI, the Ministry of Home Affairs said, “Data of illegal Bangladeshi citizens including their activities during staying in the country is not centrally available.” The RTI was filed by an activist from Jharkhand, a state where the BJP invoked “Bangladeshi infiltrator” as a major poll spectre and motif in the assembly election. In terms of policy measures, though there are several laws – the Foreigners Act (1946), Registration of Foreigners Act (1939), Passport (Entry into India) Act, 1920 and Citizenship Act (1955) — there are glaring procedural gaps when it comes to verifying identities. The onus, as in Assam, is mostly on the accused to prove their innocence or citizenship, increasing their already heavy social and economic burdens. In March 2018, responding to a question in Rajya Sabha, the then minister of state in the Ministry of Home Affairs, Kiren Rijiju, said that India doesn’t have a repatriation treaty with Bangladesh for those who have illegally entered India. The number of immigrants deported to Bangladesh has come down from 5234 in 2013 to 51 in 2017, he said. The declining rate of deportation signals two possibilities — either India has successfully contained the problem of illegal immigration, or deportation has become a difficult task.

And yet, this sensitive issue continues to raise its head amid the heat and dust of electoral politics. It is high time that it is treated with the sobriety and rigour that it deserves. There is an urgent need for data and a robust verification strategy. Ordinary men and women, mostly belonging to marginalised sections of society, must not be forced to go through tedious tribunals or be subjected to arbitrary or opaque state action. They cannot be made victims of political whim and electoral opportunism.

IRAN MINISTER IN DELHI FOR TALKS TO BOOST TIES, TRADE VIA CHABAHAR

Days before Donald Trump returns to the Oval Office, Majid Takht-Ravanchi, Iran’s Deputy Foreign Minister, has reached New Delhi for talks Friday with External Affairs Minister S Jaishankar and Foreign Secretary Vikram Misri.

- Iran is looking at increasing bilateral trade with India, including via the Chabahar port.
- From tourism to agriculture, Tehran wants to boost ties with Delhi and bilateral talks will take place before the Trump administration takes charge on January 20.
- Iran would also like to get a sense from Indian officials on dealing with sanctions — India has stopped buying oil from Iran due to the threat of sanctions, but has continued to buy oil from Russia despite sanctions.
- For Tehran, which has suffered from the economic sanctions imposed during Trump’s first term, increasing trade with India is “very important”. Tehran hopes to diversify to other areas, including agriculture and petrochemical products through the Chabahar port.
- Iran is also looking at an increase in Indian tourist travel to Iran, and wants to facilitate that. While it’s a people-to-people exchange, it increases economic activity. Tehran also wants an increase in the number of Iranians travelling to India.



- The regional situation is also going to be discussed with the Indian government. The Iranian source expressed “concern” over the turn of events in Gaza, Lebanon and Syria.
- Iran is also building ties with Russia, and officials said that they are going to sign a major partnership pact with Russia at the end of January. Tehran also views China as a “very important” partner which has “economic power” spread across the world.

Do You Know:

- Chabahar, which sits at the mouth of the Gulf of Oman, is Iran’s first deepwater port that puts the country on the global oceanic trade route map. The port lies to the west of Iran’s border with Pakistan, about as far as Gwadar, a competing port developed by China in Pakistan, lies to the east of the border.
- Chabahar is of strategic importance to both Iran and India. It can potentially help Tehran ward off the effect of Western sanctions, and offers New Delhi an alternative route that bypasses Pakistan, which does not allow India land access for trade with Afghanistan and Central Asia.
- The port is also part of the proposed International North-South Transport Corridor (INSTC), a multi-modal transportation project linking the Indian Ocean and Persian Gulf to the Caspian Sea via Iran, and onward to northern Europe via St Petersburg in Russia.
- India’s involvement in the development of the port began in 2002, when Hassan Rouhani, then National Security Advisor to President Syed Mohammad Khatami, held discussions with his Indian counterpart, Brajesh Mishra.
- There are two distinct ports in the Chabahar project, Shahid Beheshti and Shahid Kalantari. India’s investment is restricted to the Shahid Beheshti port, according to the paper, ‘Geopolitics of Chabahar port for Iran, India and Afghanistan’, by Ali Omid and Gauri Noolkar-Oak of the University of Isfahan (Iran).
- India, Iran, and Afghanistan signed a trilateral agreement in April 2016, after which the Indian Shipping Ministry worked at a rapid pace towards developing the port. In December 2017, the first phase of Shahid Beheshti port was inaugurated, and India sent its first consignment of wheat to Afghanistan through Chabahar that same year.

COST AND BENEFIT

Amidst signs that New Delhi and Dhaka are trying to resolve other issues that have marred their ties in the last few months, the issue of Bangladesh’s demand that India extradite Sheikh Hasina remains intractable, with neither side budging. In December, Indian Foreign Secretary Vikram Misri was able to convey during his Dhaka visit, that India remains a friend. He also reaffirmed the continuity in ties in trade, energy, infrastructure and connectivity; the two sides appear to have calmed the situation at the border as well. Finally, the government indicated to a parliamentary committee that while Ms. Hasina remains in Delhi as India’s guest, it had no truck with her political pronouncements and messages targeting Mr. Yunus. The situation seemed to shift last week, as Bangladesh sent New Delhi a “note verbale” or diplomatic missive demanding Ms. Hasina’s extradition to face trial for cases that include corruption, and a Dhaka-based International Crimes Tribunal charge that she had perpetrated ‘crimes against humanity’ in ordering a police crackdown on student protesters. The India-Bangladesh extradition treaty of 2013, amended in 2016, sets out the course of procedures quite clearly, which needs to be pursued through a more



formal representation from Bangladesh to India. The note verbale appears to be meant only to assuage domestic political constituencies, while India's External Affairs Ministry's response — not rejecting it outright — seems to be a non-escalatory way of dealing with the situation.

While the legalities of the request can be the subject of protracted negotiations, it is important to ensure that the issue does not hold India-Bangladesh relations hostage. The Yunus government must understand that the history of India's relationship with Ms. Hasina and her family is forged in the sacrifices made in both countries for the liberation of Bangladesh. The assassination of her father, Sheikh Mujibur Rahman, and members of her family in 1975, and her first exile in India, strengthened the bond. It is futile to expect that India would simply hand Ms. Hasina over, when she has sought refuge here, and no amount of coercive pressure could force an Indian government to comply. The decision to shelter the Dalai Lama in 1959, for example, has not wavered despite Chinese pressure. Furthermore, bringing Ms. Hasina to account is not the mandate of the interim regime, and should be pursued by a government duly elected by the Bangladeshi people. In Delhi, there must be a recognition that the actions of Ms. Hasina's government have scarred the nation. The fact that she is making political statements with ease from Indian soil is likely to embitter ties and New Delhi must conduct a full cost-benefit analysis of how helpful these statements are. Given the consequences of a tense border and geopolitical turmoil, both countries must learn to deal with the issue diplomatically — in a separate silo from other aspects of their important relationship.

NEW TURN TO BATTLE OF BEGUMS: BANGLADESH REWRITES TEXTBOOKS ON 1971 LIBERATION WAR

Textbooks in Bangladesh will now state that Ziaur Rahman — not 'Bangabandhu' Sheikh Mujibur Rahman — declared the country's independence in 1971, The Daily Star reported on Wednesday. The new textbooks have also removed Mujib's title of 'Father of the Nation'

- "The new textbooks for the 2025 academic year will state that 'on March 26, 1971, Ziaur Rahman declared the independence of Bangladesh, and on March 27, he made another declaration of independence on behalf of Bangabandhu,'" Prof A K M Reazul Hassan, chairman of the National Curriculum and Textbook Board, told The Daily Star.
- Ziaur was the founder of the Bangladesh Nationalist Party (BNP) and husband of current BNP chief Khaleda Zia. Mujib, father of recently deposed Bangladesh Prime Minister Sheikh Hasina, led the Bangladesh liberation struggle.
- This is not the first time that Bangladesh textbooks have undergone such changes.
- The legacies of Mujib and Ziaur have always been politically contested, and the question of who proclaimed the independence of Bangladesh disputed. While the Awami League, the party which steered the Bangladesh liberation struggle under Mujib, claims that it was 'Bangabandhu' who made the declaration, the BNP credits its founder Ziaur.
- This has meant that official history has varied depending on the dispensation in Dhaka. In 1978, during Ziaur's reign as Bangladesh President, official history was changed for the first time to proclaim Ziaur as the person who made the declaration of independence.
- Since then, official histories have been rewritten multiple times, including most recently after Sheikh Hasina came to power in 2009.



- In 2010, the third volume of 'Bangladesh Independence War: Documents', published in 1978, presenting Ziaur as the proclaimer of independence, was declared null and void by the Bangladesh Supreme Court.

Do You Know:

- At the heart of the contestation regarding who declared Bangladesh's freedom are what Mujib and Ziaur stand for in Bangladesh. Mujib won the 1973 elections with a massive mandate, although by most accounts, the process was mired by rigging and manipulation. He went on to ban Islamist parties, which he claimed supported Pakistan during the Liberation War, and sought to establish Bangladesh as a secular republic.
- He was assassinated, along with most of his family, in 1975 during the first of multiple coups in independent Bangladesh. This paved the way for the eventual rise of Ziaur Rahman, who went from being Bangladesh's military chief to President. Ziaur, too, would be killed during another coup in 1981, but during his years in power, he ended the clampdown on Islamist elements and most notably, removed 'secularism' from the Bangladesh Constitution in 1978.
- This has till date remained the central contention between the political successors of Mujib and Ziaur, Hasina and Khaleda. Hasina governments have notably clamped down on Islamist elements, while under Khaleda, they have been emboldened and given space in high offices.
- The decision by the current dispensation to highlight the contributions of Ziaur in Bangladesh's Liberation War over those of Mujib, reflects the legacy they wish to associate with and the vision of Bangladesh they champion.

BEHAVIOUR THAT CAUSES MENTAL PAIN TO SPOUSE GROUND FOR DIVORCE: SC

The Supreme Court has in a judgment held that patterns of behaviour which cause immense emotional distress to a spouse amount to mental cruelty and is a ground for divorce. A Bench headed by Justice Vikram Nath said cruelty was not limited to inflicting physical pain to a spouse.

"Cruelty also encompasses actions that inflict mental pain and suffering that creates a reasonable apprehension of harm or injury to an aggrieved spouse from the conduct of the other spouse so as to make it impossible for them to stay together," Justice Nath explained.

The court was hearing the prolonged legal battle between a couple, both engineers with a child, who have lived separately for years. The man has sought divorce on the ground that his estranged wife's conduct, including leaving the matrimonial home and filing criminal complaints against him, amounted to mental cruelty. He said her behaviour had not only strained their relationship but also caused significant damage to his reputation and peace of mind. The Madras High Court had given the man divorce. She challenged the decree in the Supreme Court.

Upholding the High Court decision, the Bench agreed that "sustained emotional torment and loss of trust in the marital relationship constitutes cruelty". The court said cruelty included actions of a spouse which were not just isolated incidents but formed a pattern of behaviour that made cohabitation impossible. Sustained and deliberate acts of cruelty make it unreasonable to expect a spouse to continue living with the other, Justice Nath noted.



“Marriage is a relationship built on mutual trust, companionship, and shared experiences. When these essential elements are missing for an extended period, the marital bond becomes a mere legal formality devoid of any substance...,” he said.

The court directed the man to pay his wife a permanent alimony of ₹50 lakh. Justice Nath dismissed the argument that the wife earned well, noting that financial independence cannot be a reason to deny her maintenance post-divorce if it was necessary to secure her dignity, social standing, and financial stability.

COLLATE COMPLAINTS RAISED ABOUT CASTE DISCRIMINATION ON CAMPUSES, SC TELLS UGC

The Supreme Court on Friday directed the University Grants Commission (UGC) to collate the total number of complaints of caste discrimination received under its 2012 Regulations in universities and higher educational institutions across the country.

A Bench of Justice Surya Kant and Ujjal Bhuyan gave the Commission six weeks to collect the data on how many Central, State, deemed and private universities and institutions of higher learning have set up Equal Opportunity Cells under the UGC (Promotion of Equity in Higher Educational Institutions) Regulations of 2012; the number of complaints received by them; and action taken on these grievances.

The order was passed on a petition filed six years ago by the mothers of Rohith Vemula and Payal Tadvi, who had appealed to the Supreme Court to act against the “rampant” caste discrimination in universities which claimed their children’s lives.

Rohith Vemula, a PhD scholar at Hyderabad Central University, and Payal Tadvi, a tribal student of Topiwala National Medical College, died by suicide in January 2016 and May 2019, respectively, after being subject to on-campus caste bias.

Meanwhile, as a stark reminder that caste bigotry was still claiming lives of young scholars in the country’s higher educational campuses, the family of Darshan Solanki joined hands with the two mothers in the Supreme Court on Friday.

Mr. Solanki, a Scheduled Caste student at the Indian Institute of Technology Bombay (IITB), died by suicide in February 2023. His death was linked to casteist insults he had suffered on campus. Justice Kant noted the mothers’ case has been in limbo for over six years in the Supreme Court. It had come up for hearing only once, in 2022.

“These petitioners have lost their children. We are also conscious of the sensitivity of the issue. We will make sure the case is listed periodically,” Justice Kant assured senior advocate Indira Jaising, appearing for the mothers.

Meanwhile, the UGC told the Supreme Court that it was working on a “new” set of regulations against on-campus caste discrimination since 2023.

“This petition is of 2019. You say that you have been formulating these new regulations since 2023... We are in 2025... How much time does the notification of regulations actually take... one or two months?” Justice Kant confronted the UGC counsel.



Justice Bhuyan said it was time the UGC showed “some sympathy” in this issue. “We direct the UGC to notify the new regulations, if any, and place it on record for our consideration,” the court ordered.

The court impleaded the Union government and the National Assessment and Accreditation Council (NAAC), and directed them to file counter affidavits to the petitions in four weeks. “The viewpoints of the Union of India and NAAC will be required for effective adjudication,” the court noted in the order.

Ms. Jaising said the UGC must come clean on whether the 820-odd universities and other higher educational institutions were actually implementing the 2012 Regulations. She noted 115 deaths by suicide had occurred between 2004-2024, many of them belonged to the Dalit communities. The court agreed to examine Ms. Jaising’s demand for exact caste-wise data on the number of deaths by suicide which had occurred in universities.

NO ONE CAN BE DEPRIVED OF PROPERTY WITHOUT ADEQUATE COMPENSATION: SC

The right to property is a human right and a constitutional right and no person can be deprived of his or her property without being paid adequate compensation, the Supreme Court ruled Thursday while also holding that in exceptional circumstances of inordinate delay in disbursement of compensation, the date of fixing the valuation can be shifted to a more recent one.

- “Right to Property ceased to be a Fundamental Right by the Constitution (Forty-Fourth Amendment) Act, 1978, however, it continues to be a human right in a welfare State, and a constitutional right under Article 300-A of the Constitution. Article 300-A of the Constitution provides that no person shall be deprived of his property save by authority of law. The State cannot dispossess a citizen of his property except in accordance with the procedure established by law,” a bench of Justices B R Gavai and K V Viswanathan said in its judgement.
- The decision came on an appeal against the November 22, 2022 judgement of a Division Bench of the Karnataka High Court dismissing the challenge to the judgement of a single judge of the HC on the question of acquisition of land for the Bengaluru-Mysuru Infrastructure Corridor Project in 2003.
- Writing for the SC bench, Justice Gavai said: “We do not find any error in the approach adopted by the learned Single Judge of the High Court in holding that the SLAO could not have shifted the date and it could have been done only by this Court in exercise of powers under Article 32/142 of the Constitution of India or by the High Court under Article 226 of the Constitution of India.
- The court said that “if the compensation to be awarded at the market value as of the year 2003 is permitted, it would amount to permitting a travesty of justice and making the constitutional provisions under Article 300-A a mockery”.
- The SC directed the SLAO to “determine the compensation to be awarded to the appellants herein on the basis of the market value prevailing as on 22nd April 2019. The appellants shall also be entitled to all the statutory benefits as are available to them under the 1894 Land Acquisition Act”.

**Do You Know:**

- On a plea by some of the land owners who said they had not been given compensation, the Special Land Acquisition Officer (SLAO), Bengaluru, by order dated April 22, 2019, decided to postpone the date of Preliminary Notification for acquisition from January 29, 2003 to 2011 and accordingly ordered the rates for that year. An amount of Rs 32,69,45,789 was awarded for 11 acre 1.25 guntas of land.
- The project proponents challenged this before the HC and a single-judge bench quashed the award and directed that fresh awards be passed in accordance with the law. The Division Bench dismissed the appeal against this following which the land owners moved the SC.
- Falling under Part IV of the Constitution titled “Directive Principles of State Policy” (DPSP), Article 39(b) places an obligation on the state to create policy towards securing “the ownership and control of the material resources of the community are so distributed as best to subserve the common good”.
- DPSP are meant to be guiding principles for the enactment of laws, but are not directly enforceable in any court of law.

INDIA MUST PROTECT AND PRESERVE ITS HARD-WON FREEDOMS

Former Prime Minister Manmohan Singh passed away at the age of 92 on December 26. In this article, dated August 15, 2022, Mr. Singh warns Indian citizens to hold as precious the unity, freedom and diversity which makes India a truly unique democracy.

The world’s largest democracy is soon to become the most populous country on earth. Therefore, the celebration of 75 years of Independence brings a special responsibility to set global standards in the protection and the promotion of individual and collective freedoms. While every Indian will proudly salute the flag as it flies high, the Tricolour must also remind us of the composite culture which makes us a uniquely great democracy in the world. On this historic occasion, we must resolve to never let our freedoms be robbed by authoritarian arrogance or allow fomented hatred to undermine the unity of the Indian people. That is the best tribute we can pay to our flag.

A unity that is precious

India emerged from the chokehold of colonial rule to build a nation from a wide scatter of British-ruled territories and princely States. This unity did not magically materialise overnight. It was the freedom struggle, inspired by Mahatma Gandhi and led by the Indian National Congress, which united Indians across the land to seek an end to foreign rule. This movement united Indians across multiple identities of language, religion, caste, gender and social status. That unity is precious to India and should not be frittered away through communally divisive, linguistically chauvinist, callously casteist and gender insensitive campaigns that will fragment the Indian identity. Such ploys may pay temporary political dividends, by setting Indians against Indians, but they will create craters on India’s path to progress as a great nation.

We were robbed of our riches by colonial rule and began our life after Independence as a poor developing country. We rose from that level to become one of the world’s leading economies, whose growth is essential to the stability of the global economy. The policy of economic liberalisation, initiated in 1991, had a galvanising effect on our economic growth. At the same time, poverty reduction and the bridging of economic inequalities became a cardinal principle of public



policy. As we pursue the path of inclusive economic growth, we should not permit only a select few among India's business leaders to reap the benefits of prosperity while income gaps keep widening.

Flag divisive politics

Jobless growth is not a safe bet for any economy. Unemployment not only does not permit the optimal use of our human resources but also creates the breeding ground for social discord and divisive politics. As we move ahead towards the next 25 years of independent India, we must aim to optimally utilise the demographic dividend of a young population through education, skilling, suitable employment and support to young entrepreneurs and innovators. This requires easy mobility across the country for education and employment. Communal and linguistic barriers will hinder such mobility and adversely impact growth. Captains of Indian industry must recognise this danger and raise their voice for national unity, not remain mute spectators when divisive politics are posing a threat to the economy.

Uphold scientific tradition

India adopted excellence in science as a path to progress since the early years of Independence. The national science policy was forward looking. Great institutions of scientific learning and research were established. India's various institutes of technology have won world renown, with many of their graduates leading global enterprises of repute. Our space, oceanography and nuclear programmes have placed us in a select group of nations whose scientific prowess and technological excellence are respectfully acknowledged by the whole world. It would be unfortunate if our scientific institutions, universities and research bodies are undermined through the induction of sub-optimal leadership, whose given mandate is to pursue cultural revivalism at the cost of academic integrity. India has had a proud scientific tradition since ancient times, but that should not become the camouflage for pseudo-science that brings discredit to our scientific community.

In the comity of nations, India won respect for adopting principled positions, opposing colonial rule, leading the Non-Aligned Movement when two power blocs were seeking global domination, espousing human rights and promoting the cause of peace. Our relations with most of our neighbours were cordial. Even when we had conflicts with some, we tried to build bridges of understanding to enable peaceful co-existence. We need to maintain these positions, even as the world witnesses new conflicts and alliances. It is essential for us to be regarded as a reliable and respected friend in most countries of the world, but especially in South Asia. We should not let our foreign policy wobble through dependence on personalised gestures for the camera but follow clear-headed initiatives through wise leadership supported by able diplomats.

THE NATURE OF DISSENT IN THE INDIAN JUDICIARY

Dissent is an important facet of a true democracy. While this is true for citizens in the republic, or parliamentarians in the legislature, it is also true for judges of a constitutional court. India and the U.S. are two strong democracies with opinionated judiciaries. Though dissents in the Indian Supreme Court (SC) are as powerful as the U.S. Supreme Court (SCOTUS), their reasons differ.

The dissents of SCOTUS are largely based on the political inclination of judges, who are direct appointees of the President, confirmed by the Senate. Justice Stephen Breyer, for instance, an appointee by the Democrats, has shown himself to be pro-affirmative action, pro-abortion and



against capital punishment. His dissent in *Glossip versus Gross* (2015) held that capital punishment violated the Eighth Amendment of the Bill of Rights, which prevented inhumane and degrading punishment. Justice Samuel Alito, on the other hand, a Republican appointee, is both anti-abortion and anti-gay rights. His dissent in *Obergefell versus Hodges* (2015) reasoned that the Constitution did not address the right to marry of same-sex couples and therefore, the courts could not grant it.

Indian judicial dissents have, however, varied from political, to social to purely intellectual disagreements.

Political dissent

Unlike the U.S., Indian judges are not appointees of the ruling party and are selected through a collegium of senior judges. Their decisions do not have a similar political undertone and may or may not associate with the view of the ruling party that was in power when they were appointed.

In the case of *ADM Jabalpur* (1976), four out of five judges held that the enforcement of fundamental rights, including Article 21, remained suspended during the national emergency under Article 359. The majority judgment was the politically sound one at the time. Justice H.R. Khanna, however, withstood the political pressure of the time, dissented and reasoned that if Article 21 remained suspended, there would be no recourse to deprivation of life and liberty, albeit in emergency. His resolve to keep 'rights' intact amidst a turbulent India, strengthened his voice on the Bench and also became the law later by a constitutional amendment to Article 359.

Another example of this could be found in the *P.V. Narasimha Rao* (1998) case, where the question was if accepting bribes for voting in Parliament was covered under parliamentary privilege, and whether it enjoyed immunity from prosecution. The majority said yes, but Justices S.C. Agarwal and A.S. Anand dissented. The majority view reflected the political atmosphere at the time and was favourable to the ruling Congress party. However, the dissent endured and later became the view of the court in *Sita Soren* (2023), where the SC overruled such an expanded view of immunity.

Dissent which is social

A dissent could also reflect a different social understanding or implication of a legal issue. In *Shayara Bano* (2017), the SC dealt with the constitutionality of the 'triple talaq' as a form of divorce among the Sunnis in Islam. Justices J.S. Khehar and Abdul Nazeer dissented with the majority, which struck down triple talaq for violating the rights of life of Muslim women. The two judges reasoned that the triple talaq was an integral part of the Sunni personal law and not violative of constitutional rights. Further, it was not for the courts to determine its constitutionality, since it is only the legislature that can intervene in socially unacceptable practices in different religions.

The decision in *Aishat Shifa* (2022) also displayed a discordant understanding of religion. This case did not have a dissent but had two separate opinions. The question was whether the State could prohibit Muslim girls from wearing a hijab to school by enforcing a universal dress code. Justice Hemant Gupta was of the view that secularism permitted the State to do so since religion was a private affair, which had no space in classrooms of a State-run school. Justice Dhulia, on the other hand, disagreed and considered 'diversity', 'plurality' and 'tolerance' as values underpinning the Constitution. This disagreement stemmed from different understandings of secularism.



Intellectual critique

A dissent could also be plainly intellectual, like that of Justice B.V. Nagarathna in *Lalta Prasad Vaish* (2024), the industrial alcohol case. Here nine judges of the SC determined whether States have the legislative competence to tax ‘industrial alcohol’, or does only the Centre have the authority. Disagreeing with eight judges, Justice Nagarathna said that States could not tax industrial alcohol. The disagreement was on the interpretation of the term ‘intoxicating liquor’ under Entry 8 of List 2 in the Seventh Schedule of the Constitution. The majority believed that this legislative entry was broad enough to include liquor unfit for human consumption, and therefore industrial alcohol. States could therefore tax it. This reasoning did not sit well with Justice Nagarathna, who opined that industrial alcohol is used for manufacturing purposes and cannot be subsumed within ‘intoxicating liquor’, which is liquor for human consumption. The difference of opinion was solely on the interpretation of the text of the Constitution —an intellectual one.

THE CHALLENGE OF HOLDING JUDGES ACCOUNTABLE

A speech delivered by Justice Shekhar Kumar Yadav of the Allahabad High Court, that made apparent his biases against the Muslim community, at an event organised by the legal cell of the Vishwa Hindu Parishad within the Court precincts on December 8, has once again spotlighted the difficulty in India’s review mechanism to hold judges of the higher judiciary accountable.

The review mechanism requires “proved misbehaviour or incapacity” to be decided by a three-member committee set up under the Judges (Inquiry) Act, 1968. This committee functions like a trial court, but is set in motion only after a successful attempt to impeach the concerned judge is moved either in the Lok Sabha or the Rajya Sabha, which must be approved by the presiding officer of the House — the Speaker in the case of the Lok Sabha, or the Vice-President/Chairman in case of the Rajya Sabha. The provisions for this mechanism flows from Articles 124 (4), (5), 217, and 218 of the Constitution of India, and the those of the Judges (Inquiry) Act, 1968.

Justice V. Ramaswami’s trial

Only two judges out of seven so far, aside from Justice Yadav against whom impeachment has been attempted, have been found guilty for their “misbehaviour” by the three-member committee, which must comprise of a Supreme Court judge, a Chief Justice of a High Court and an eminent jurist.

The first was retired Supreme Court Justice V. Ramaswami, who was found guilty of extravagant spending on his official residence such as buying air conditioners, plush furniture and bedding, without following due process, much like the accusations made against Trinamool Congress MP Mahua Moitra by the ruling BJP last year. While such misdemeanours by current accounts of corruption seem like an arcane quibble over propriety, they nevertheless animated public discourse on a judge’s conduct in the late 80s and early 90s. Such discussions led to the foundation of the ‘Restatement of Values of Judicial Life’ adopted by the Supreme Court on May 7, 1997, as the code of conduct for those holding high offices in judiciary.

Speaking to *The Hindu*, retired Madras High Court Justice K. Chandru, who played a pivotal role in the impeachment proceedings against Justice Ramaswami, recollected how the judge “bought 6+1 = 7 maces, one with a silver head to denote the Chief Justice’s arrival and took it on a cargo plane in 1988, and not by rail,” following his elevation as the Chief Justice of the Punjab and Haryana High Court. “There was no tendering process that was followed for the purchase of the maces,”



Justice Chandru added. He was referring to the colonial practice followed at the Madras HC where an orderly precedes a judge, to signal his arrival to ensure those in the hallway and the courthouse “maintain decorum”. Justice Ramaswami deemed it fit to continue this practice at the Punjab and Haryana High Court, which did not have this practice as it was founded in independent India, much to the shock of his “brother judges”. In his Tamil book, I too became a judge, Justice Chandru recalled a letter dated August 18, 1988, in which then Chief Justice V. Ramaswami’s colleagues wrote “You will remember that most of us told you later too that we are opposed to the introduction of maces. Maces are but a relic of the imperial past and out of tune with our socialistic pattern of society.”

The adverse verdict by the three-member panel constituted under the Judges Inquiry Act against V. Ramaswami set the precedent of then CJI Sabyasachi Mukherjee deciding not to allocate any work to him in 1993. The failure of the impeachment motion in the Lok Sabha that year, did not lead to a reversal of the CJI’s decision. No cases were listed for hearing before Justice Ramaswami’s Bench until his retirement three years later.

Article 124 (4) of the Constitution stipulates that the panel’s finding must be voted upon by Parliament. The motion requires either a two-thirds majority of present MPs voting in favour of the motion or an absolute majority in each House, for the judge to be removed. On May 10, 1993, of the 401 members present in the Lok Sabha, 196 voted for Ramaswami’s removal. While no one voted against the motion, 205 abstentions by the ruling Congress ensured the defeat of the impeachment.

Resignation before accountability

The second judge to face an impeachment motion was Justice Soumitra Sen of the Calcutta High Court. Justice Sen became the first judge of India’s higher judiciary who was voted to be removed by the Rajya Sabha by an overwhelming majority, but he resigned in September 2011, days before the motion was to be tabled in the Lok Sabha. Justice Sen was found guilty of misappropriating ₹33.23 lakh in a case in 1983, as a court-appointed receiver in his capacity as a lawyer, and misrepresenting facts before a Calcutta court.

Similarly, Chief Justice of the Sikkim High Court, P.D. Dinakaran resigned on July 29, 2011, the day of the first sitting of the three-member panel constituted under the Judges Inquiry Act, to look into 16 charges, some of them as grave as appropriating more than 300 acres of lands from farmers in Tamil Nadu’s Tiruvallur district, after he became a judge of the Madras High Court.

Such instances highlight that members of India’s higher judiciary enjoy a disproportionately greater level of immunity when compared with even elected officials as they “continue to enjoy the perks of being a retired judge, like pension” and other benefits, said jurist Mohan Gopal, who was part of the three-member committee in the Dinakaran case. Such resignations abort the trial and subsequent impeachment, something not afforded to even sitting or former Chief Ministers, like in the case of Jayalalithaa in the disproportionate assets petition decided in 2014.

The Forum for Judicial Accountability (FJA) that led the campaign against judicial corruption in the Dinakaran case, wrote to the three-member committee on August 6 that year, seeking a continuation of the committee’s investigations arguing that “the jurisdiction of the Committee is untouched by the factum of removal...”. The FJA’s contention was that there were two separate parts to the removal process of a justice — one that concerns finding guilt, which is governed by Article 124 (5) and the second, which is impeachment, which is governed by article 124 (4) and is within the jurisdiction of Parliament. “The purpose of impeachment is not merely removal from



office, but a more substantial one about accountability to the people whose trust is alleged to be breached and whose confidence in judiciary needs to be reinforced,” the FJA argued.

“Though Article 124(5) of the Constitution uses the words “removed from office” and is silent on the issue of disqualification from holding future office, the finding of guilt by the Committee and the subsequent proceedings in Parliament will have the effect of disqualifying the person from holding public office in future. It may be noted that Justice V.Ramasami having been found guilty by the Committee, continued to hold office as a judge of the Supreme Court and retired with all the benefits, taking advantage of the defeat of the impeachment motion. Post retirement he was appointed as Chairperson of the Tamil Nadu Law Commission,” said FJA.

The need to complete proceedings

RTI petitions by former Frontline legal affairs editor, V. Venkatesan revealed that both jurist Mohan Gopal and the Chairman of the three-member panel retired justice Aftab Alam believed the work of the committee must continue. The RTI replies made public a set of correspondence between Mohan Gopal and the two members of the committee, and of the committee with the Rajya Sabha Chairperson Hamid Ansari. Mr. Venkatesan has included these letters as annexures to his 2014 book Constitutional Conundrums: Challenges to India’s Democratic Process. In his August 15, 2011 letter to Justice Aftab Alam and J. S. Kehar, the then Chief Justice of the Karnataka HC, Mr. Gopal writes, “the resignation of Justice P.D. Dinakaran presents our Committee with an unprecedented situation. Any decision we take will have a profound and far-reaching impact on the framework for judicial accountability in our country — both in terms [of the] future implementation of the Judges Inquiry Act, 1968, and in terms of the manner in which the current Constitutional and legal framework for judicial accountability is reformed....While undoubtedly the investigation and the proof stage arises only when there is a prayer for removal from office and is the essential first step or that purpose, it would be an error to ignore the independent role and value of the investigation and proof part of the process in and by itself.. A view that the resignation would result in the investigation and proof process being aborted would in effect place in the hands of the judge who is the object of the investigation the power to end the investigation against him by resigning — an absurd situation that the legislature could not have intended. In such circumstances, there would be no incentive arising from this process for any judge to avoid misbehaviour as any judge can end investigation into charges against him at any point by resigning from office.”

While the Chair justice Aftab Alam concurred and sought the continuation of the Committee, the request was rejected by Rajya Sabha Chairman Hamid Ansari.

FARM FIRE

The sit-in protest that began almost a year ago by a group of farmers owing allegiance to the Samyukt Kisan Morcha (Non Political) at the Punjab-Haryana border has taken a new turn with their leader Jagjit Singh Dallewal refusing to end his indefinite fast, which started on November 26. The stand of the 70-year-old leader, a cancer patient, has drawn the attention of the Supreme Court. Farmers in the State, across their organisational and political positions, supported a Punjab bandh on December 30, in solidarity with Mr. Dallewal. The Court has allowed the Punjab government time till Thursday to ensure that Mr. Dallewal gets medical aid. The farmers’ outfits have told the Court that their leader would accept medical help only if the Union Government held a discussion with them on their demands such as implementing a legalised Minimum Support Price as per the formula of the National Commission on Farmers (constituted by M.S.



Swaminathan), a debt waiver for all farmers and the withdrawal of all cases against farmers for protesting against the three farm laws, which were repealed in 2021. Major farmers' organisations in the State, including the Samyukt Kisan Morcha, Bharatiya Kisan Union (Ekta-Ugrahan) and the All India Kisan Sabha, have urged the Centre and State governments to address the demands so that Mr. Dallewal ends his fast. Several Opposition parties had also demanded that the Centre start a dialogue with farmers.

It is debatable how helpful the Court's ultimatum is in situations such as these, when policy, law and order and politics are all intertwined. Perhaps, the courts should not be so interfering and governments should be more proactive and preemptive in dealing with such flare-ups. The demands on the table have been pending for long, and the crisis in agriculture is multifaceted. But allowing these permanent sit-in protests is problematic when someone goes on a fast unto death because there is no way to know if he is being forced to starve to death or not allowed to end the fast. Many of the farmers' leaders have met Mr. Dallewal requesting him to end his hunger strike. However, such requests have been turned down with his supporters labelling other farmers' leaders as agents of the government. Sane voices among the farmers have been maintaining that Mr. Dallewal should join the joint protests rather than adopting his fast unto death protest. The Punjab and Haryana governments and the Union Government must ensure that his life is not in danger. Mr. Dallewal and his associates should heed the advice of other farmers' leaders and clear the apprehensions that he is under pressure to continue with the hunger strike.

PRIVATE MEMBERS' BILLS GET SHORT SHRIFT IN BOTH HOUSES OF PARLIAMENT

During the five-year term of the 17th Lok Sabha that ended in 2024, only 9.08 hours were spent on Private Members' Bills, while the Rajya Sabha spent 27.01 hours on them during the period, shows an analysis by PRS Legislative Research, an independent research body.

The Lower House spent 16.43 hours and the Upper House 20.78 hours on Private Members' Resolution.

In the two sessions of the 18th Lok Sabha, 0.15 hours was spent on such Bills, while the Rajya Sabha spent 0.62 hours. The Lower House spent 1.98 hours on resolutions and the Upper House 2.09 hours.

The resolutions are declarations on which the House votes, while the Bills refer to proposed legislation. These are the only instruments available for MPs' individual expression without being bound by their party's diktat.

They serve as an important medium for political messaging. For example in 1966, after the sudden death of then Prime Minister Lal Bahadur Shastri, the Congress chose Indira Gandhi to replace him. H.V. Kamath, then an MP from the Praja Socialist Party, moved a Private Members' Bill to amend the Constitution to allow only Lok Sabha members to be eligible for the post of Prime Minister. Indira Gandhi was a member of the Rajya Sabha at the time.

The time spent on such Bills for the entire tenure of the Lok Sabha is a minuscule fraction of the total hours both Houses sit in a single session. Till date, only 14 Private Members' Bills have been passed and received assent. None have been passed in both Houses since 1970.

Jairam Ramesh, Chief Whip of the Congress in the Rajya Sabha, said an all-round indifference is responsible for the decline of this parliamentary tool. "Nobody takes it seriously. Very often I have found even the members whose Bills have been listed in the schedule do not show up," he said.



One of the reasons, Mr. Ramesh said, is that these Bills are scheduled for Friday afternoons, when members are in a hurry to return to their constituencies for the weekend. He has proposed that for Private Members' business to survive, it should be scheduled midweek on Wednesday.

With a narrowing window available for Private Members' business, it takes years for legislation moved by members to come up for discussion. Lok Sabha member and senior Congress leader Manish Tewari said that three of his Bills, including one to amend the anti-defection law to free MPs from the respective party position in all instances other than no-confidence motions, adjournment motions, and financial Bills that impact the stability of government, have been pending for over 15 years. "I had moved these Bills in the 15th Lok Sabha and they have not come up for discussion since. Curtailing the Private Members' Bill is equal to strangling the voice of parliamentarians," Mr. Tewari said.

EXPANDING POLL REACH: WOMEN FOUGHT IN 390 LS SEATS, HIGHEST SINCE 1957, SHOWS EC DATA

With more and more women participation in electoral exercises, the 2024 Lok Sabha elections saw 800 women candidates contesting across 390 parliamentary constituencies, the higher-ever since the second general elections in 1957, showed an analysis of the data released by the Election Commission recently.

- With 800 women candidates in the fray, this also led to a decline in the number of seats having no women candidate to its lowest-ever of 152. Comparable data was unavailable for 1951 and 1971. Over the years, however, the number of women candidates has been on the rise.
- According to EC data, no women candidate was in fray in 152 constituencies of the 543 constituencies, down from 171 in 2019 and 166 in 2014.
- Of the constituencies having no female candidate in 2024 LS polls, the highest of 30 was in UP, followed by Bihar (15) and Gujarat (14). In the 2024 LS polls, 167 constituencies saw at least one woman candidate. There were two women candidates in 119 seats, 3 in 59 seats, 4 in 25 seats, 5 in 10 seats, 6 in 5 seats, 7 in 2 seats, and 8 in three seats.
- Three constituencies — Baramati, Secunderabad, and Warangal — had the highest number of women candidates at eight. Of the 800 women candidates this year, only 74 won and 629 lost their deposits, data showed.
- More and more women are coming out to vote, and in fact they again outnumbered men in exercising their franchise in 2024, in continuation of a trend from 2019. According to the poll panel, 65.78% of women voters cast their votes in 2024 (excluding Surat) as compared to 65.55% men. "Females outnumbered men in 2024 again like in 2019; this is only the second time in the history of GEs to Lok Sabha," the EC noted.

Do You Know:

- One can argue that one of the biggest achievements of independent India's experiments with democracy has been its commitment to universal adult franchise since its first general election in 1951-52. The fact that all adult women in India were eligible to vote since the birth of the nation, and without much opposition, was indeed historic given that in most developed and powerful countries of the world such as Great Britain and America, suffrage for women was achieved through a long, tiresome and violent process.



- Despite the remarkable achievement in women's voting rights, till about the 1990s, women voter turnout in India remained significantly lower compared to men. That trend, though, appears to have changed through a major shift in more recent years.
- India has elected 74 women MPs to Lok Sabha this year, four fewer than in 2019 and 52 more than in India's first elections in 1952. These 74 women make just 13.63% of the elected strength of the Lower House, much less than the 33% that will be reserved for women after the next delimitation exercise.

ARE FORMER PRIME MINISTERS MANDATED MEMORIALS?

The story so far:

Former Prime Minister Manmohan Singh passed away on December 26. The Union Ministry of Home Affairs (MHA) declared seven days of State mourning and announced a state funeral for the dignitary. Mr. Singh was cremated at the Nigambodh Ghat in central Delhi, a first for any former PM. The Congress party said it was an "insult" that a separate place was not allocated by the government for the funeral of the former PM. The Congress party demanded that a memorial be built at the designated place where the cremation took place.

Is there a rule related to memorials?

While guidelines exist for State funerals, there is no specific rule or government order regarding allocation of space for memorials for former PMs. According to constitutional expert P.D.T Achary, there was a departure in the case of Mr. Singh. "As far as I know, there is no such rule. The convention is that former PMs have been cremated at designated places and in this case there is a departure. They cremated him at a place where anybody can be cremated even a common man. In our country though everyone is equal before the law, in society, a former PM has a status and especially a person like Manmohan Singh who was also globally respected," Mr. Achary said.

What has been the trend in the past?

Except PM Vishwanath Pratap Singh, all other former PMs have memorials dedicated to them, majorly in Delhi and other parts of the country.

P. V. Narasimha Rao got a memorial in his name at Ekta Sthal in Delhi in 2015, 10 years after his death in 2004. In Delhi, the samadhi of Jawaharlal Nehru is known as Shanti Vana, Lal Bahadur Shastri's memorial is known as Vijay Ghat, that of Charan Singh's is Kisan Ghat, Indira Gandhi's memorial is at Shakti Sthal, and Rajiv Gandhi's memorial is known as Vir Bhumi. In 2013, due to paucity of space, the Congress government decided that all memorials will be built at Smriti Sthal.

Who maintains the memorials?

According to a reply furnished by the Culture Ministry on December 11, 2012 in Lok Sabha, the memorials of various personalities are maintained by the respective State Governments and local municipalities. "However, the Central Government through the Ministry of Urban Development is looking after the upkeep and maintenance of the Samadhis adjacent to Rajghat, New Delhi, Morarji Desai's Samadhi at Abhay Ghat at Ahmedabad and the Rajiv Gandhi Memorial at Sriperumbudur (Tamil Nadu)," the reply stated.



What is the Congress's demand?

On December 27, Congress president Mallikarjun Kharge wrote to Prime Minister Narendra Modi, requesting the Union Government to identify a designated place where the last rites of the departed leader could be held and a memorial built thereafter. Despite the request, the cremation was held at Nigambodh Ghat on December 28. Following an uproar, the MHA released a press statement on December 27 at 11.45 pm. It stated that the government received a request to allocate space for a memorial for the former Prime Minister. "Immediately after the Cabinet meeting, Home Minister Amit Shah communicated to Congress President Kharge and the family of Late Dr Manmohan Singh that the Government will allocate space for the memorial. In the meanwhile cremation and other formalities can happen because a Trust has to be formed and space has to be allocated to it," the statement said. Till December 30, the memorial for Mr. Singh had not been announced. Atal Bihari Vajpayee who passed on August 16, 2018 was cremated at Smriti Sthal, and a memorial came up at the same place within 45 days. The memorial was funded by the "Atal Smriti Nyas Society". It was built at a total cost of ₹10.51 crore which was borne entirely by the society.

KEJRIWAL PROMISES ₹18,000 PER MONTH FOR PRIESTS, GRANTHIS IF AAP IS RE-ELECTED

Aam Aadmi Party (AAP) national convener Arvind Kejriwal on Monday announced that his party will give ₹18,000 per month as honorarium to priests in temples and granthis of gurdwaras under the Pujari Granthi Samman Yojana if AAP wins the Delhi Assembly election due in February next year.

The scheme has not been passed by the Delhi Cabinet and is an election promise of AAP at this point. This is the third such scheme that the party has announced in December.

"Around ₹18,000 will be given per month once our government is formed. This is happening for the first time in India. I hope BJP and Congress will do it in their own States," Mr. Kejriwal said at a press conference, adding that AAP will start registration for the scheme from Tuesday.

The BJP claimed that Mr. Kejriwal was "forced" to announce the scheme due to protests by its Delhi unit and its 'Pujari Prakosht' over the past two years demanding salary for priests and granthis.

Political storm likely

This promise is also expected to run into a political storm as Lieutenant-Governor V.K. Saxena has already ordered Delhi Police to take action against private persons gathering personal details of women in the name of Mahila Samman Yojana, another poll promise by Mr. Kejriwal.

Addressing mediapersons, the AAP chief said: "I will go to the Hanuman Mandir in Connaught Place and register the priests there. Our MLAs, candidates, and workers will be registering priests at all temples and gurdwaras from tomorrow."

'Don't stop scheme'

Mr. Kejriwal also requested the BJP not to stop this scheme like "you tried to stop the Mahila Samman Yojana and the Sanjeevani Yojana". "Harassing or opposing this initiative would be a grave sin," he said.



GOVT GIVES SANCTION, J&K REVENUE SECY FIRST IAS OFFICER IN THE CASE TO BE PROSECUTED

The central government has allowed the Central Bureau of Investigation to prosecute Jammu and Kashmir Revenue Secretary Kumar Rajeev Ranjan for alleged irregularities in granting gun licences, making him the first IAS officer against whom such a prosecution sanction has been granted in the case.

- The CBI is probing irregularities in granting over 2.74 lakh gun licences between 2012 and 2016 — when J&K was still a state — by district magistrates (DMs), deputy commissioners and licencing authorities for “monetary considerations”. Agencies estimate the alleged scam to run into more than Rs 100 crore.
- In October, the CBI told the court that it was still awaiting prosecution sanction against 16 erstwhile District Magistrates (13 IAS officers and three KAS officers) who, during their posting in different districts of the erstwhile Jammu and Kashmir state, had issued gun licences “illegally” to “ineligible people” across the country.
- On November 25, a Division Bench of the HC comprising Chief Justice Tashi Rabstan and Justice M.A. Chowdhary had expressed displeasure over “selective prosecution” in the case, observing that while the CBI had already concluded its investigation, the Union Ministry of Home Affairs had yet to sanction their prosecution.

Do You Know:

- The Central Government is the competent authority to initiate disciplinary proceedings against IAS officers for misconducts while working in the affairs of Government of India. The Central Government is also the competent authority in respect of disciplinary proceedings initiated by the State Government where subsequent to inquiry, a major penalty has been proposed.
- The Central Government also considers proposals for sanction for prosecution against IAS Officers for offences under P.C. Act, 1988, subsequent to completion of investigation and filing of chargesheet. In the past one year 8 cases for prosecution sanction have been granted by the Central Government.
- DoPT in exercise of powers conferred under sub-rule 3 of the Rule 16 of the All India Services (Death-cum-retirement Benefits) Rules 1958 has prematurely retired, in public interest, 4 (four) IAS officers since 2014.

OMAR MAKES PITCH FOR EASING OF HARSH POLICE VERIFICATION PROCESSES IN J&K

Jammu and Kashmir Chief Minister Omar Abdullah on Thursday pitched for the relaxation of harsh police verification processes put in place in the Union Territory post-2019, saying he “does not consider a militant’s son a militant”.

Speaking at the first press conference since assuming the office of Chief Minister in October last year, Mr. Abdullah admitted to a truncated role on security matters till Statehood is restored but called for “ease in police verification processes”. “In the past, we did away with blacklisting [of families]. We can’t instruct given the order [in the Union Territory] but we hope for an easing of verification processes. I have already spoken to the CID chief regarding the issue,” Mr. Abdullah said.



The Chief Minister faced a number of questions on harsh police verification processes employed for passports and jobs to family members of militants and separatists, accreditation of journalists, and dismissal of employees by the Lieutenant-Governor. “As a State, a lot could be done [in these matters] but not as a Union Territory. We do need Statehood back,” Mr. Abdullah said. The National Conference had promised to revisit cases of termination of employees and ease verification processes in its manifesto.

The Chief Minister, who was accompanied by his Cabinet Ministers and topofficials, also ruled out any major friction with the Raj Bhavan. “It is still a learning experience to know where our authority starts and ends and where the L-G’s authority starts and ends. The business rules are being vetted by legal luminaries and its introduction will bring a lot of clarity soon,” he said.

He said it was a conscious decision to meet the top leadership of the ruling BJP over the Statehood issue instead of going to the court. “I met the top leadership with the hope that the commitment made to us on Statehood will be fulfilled. I expect it to happen soon,” he said.

EXPRESS VIEW ON BIREN SINGH’S APOLOGY: SORRY ISN’T ENOUGH

This entire year has been very unfortunate. I feel regret and I want to say sorry to the people of the state for what’s happening till today since last May 3.” On the eve of 2025, Manipur Chief Minister N Biren Singh’s admission of responsibility for the unabated violence on his watch in the state at a press conference in Imphal is that rare — and long overdue — thing in politics and government: An effort at honesty, a stab at introspection and accountability. Unfortunately, it has come far too late. It is prompted, possibly, by political exigency and the growing crescendo of protests not just from the strife-torn people but his own legislators and coalition partners. Allies of the NDA, from the Mizo National Front to the National People’s Party, have called for a change of guard in Manipur because of the government’s persistent failure in curbing the violence that has held the state hostage since May 2023. Singh’s proximity to armed insurgency groups such as the Arambai Tenggol, too, has drawn increasing scrutiny, with a section of his MLAs joining the chorus against him.

Notably, Singh’s admission coincides with another rare and overdue acknowledgement of the turmoil in Manipur, this time from the Centre, that has maintained a studied distance from the crisis, with Prime Minister Narendra Modi not visiting the state even once through this period. In its annual report released on December 30, the Ministry of Home Affairs has attributed the rise in insurgency in the Northeast to the 20-month-long ethnic strife in Manipur: “The State accounted for about 77 per cent of the total violent incidents in NER (North-East Region) in 2023 (Manipur: 187, entire NEL 243)...” This story of escalation is a reflection of the many ways in which Manipur has been failed by governments at the Centre and in the state, its ethnic vulnerabilities stoked by a lack of developmental opportunities, partisanship and a tone-deaf insistence on framing it as an insider-outsider issue, to be tamed by force rather than dialogue.

And yet, through the course of his own political rise, first with the Democratic Revolutionary Peoples Party, and then with the Congress, and finally with the BJP since 2016, if there’s one thing that Singh benefited from, it was his ability to have an ear to the ground and to listen to people across board. In his earlier terms, Singh, a Meitei, was embraced by both Nagas and Kuki-Zoms. With flagship outreach programmes such as “Go To Hills” aimed at integrating the hill tribes into his developmental vision, he was seen as the people’s chief minister who could repair the fragile bonds between communities. The fact that that tie has frayed, and that the Lok Sabha elections saw the BJP lose to the Congress in the state should have been enough of a signal for the CM to



course correct. Now, with the trust deficit widening, the work of reparation, long delayed, must urgently be taken forward.

TOO LITTLE, TOO LATE

Conflict resolution and peace building, or the absence of both, and the prolongation of strife are dependent upon certain conditions. If there is a “winning side” in the conflict that seeks to restitute and reconcile with the losing side, then there is a guarantee of peace. If there are no winning sides but a honourable compromise is worked out between two sides, then too there is the possibility of lasting peace. There are also situations when conflicts are not resolved but a tenuous yet steady peace is maintained through dialogue and discussion. But a situation where violence raises its head time and again, and when actors in the conflict continue to be hostile without even talking to each other, cannot be described as “peaceful”. The Union Home Ministry (MHA) has patted itself on the back by claiming that the Bharatiya Janata Party-led government has managed to “build bridges of unity in the North East... to usher in .. peace with unprecedented success”. But if the Manipur situation where outcomes of the conflagration that raged in May 2023 continue to roil the State with sporadic skirmishes, and recurring crises are anything to go by, then the statement is not only a false claim but is also in line with the regime’s efforts to portray success where failure is apparent in order to win the battle of perceptions.

Soon after this year-end report of the MHA came out, the beleaguered Chief Minister of Manipur, N. Biren Singh, issued an apology for the ethnic violence in the State. This, in any case, is too little too late in the day as his government does not seem to enjoy the confidence of at least one particular ethnic community in the State. For the MHA to portray that the northeast is on the path to peace and prosperity, even as the embers of the ethnic violence in Manipur refuse to die down and restrictive measures are being reimposed, can only be described as burying its head in the sand. In December, the Union government had also reimposed the Protected Area Regime amid “security concerns arising out of influx from neighbouring countries” — a reference to refugees from civil war-torn Myanmar. The MHA also said that it will map demographic data along the Myanmar border to help in the fencing of the international border and stopping infiltration. Again, it will be a grave mistake to bracket refugees fleeing the Myanmar junta’s repression as infiltrators and this might exacerbate already fragile ethnic relations in border States such as Nagaland, Manipur and Mizoram. The MHA must instead focus on getting its act together in conducting the census and working with the State governments to bring out a humane policy of addressing the refugee situation. Short of doing so, the Ministry’s encomiums to itself will be smug self-satisfaction devoid of all meaning.

‘MANIPUR ACCOUNTS FOR 77% OF NORTHEAST VIOLENCE CASES’

State recorded 137 incidents in 2022, which rose to 187 in 2023 and 203 till November-end in 2024, according to Home Ministry; counter-insurgency operations led to 33 insurgent deaths in 2023

Manipur accounted for 77% of violent incidents that took place in northeastern India in 2023, according to the Union Home Ministry’s annual report for 2023-24.

There were 243 violent incidents reported in the Northeast in 2023, of which 187 were in Manipur. The Union government released ₹247.26 crore to Manipur in 2023 to operate relief camps and rehabilitate people affected by the State’s “law and order crisis”.



The Home Ministry report, published on Monday, said that the rise in incidents of violence in Manipur was due to the prevailing ethnic strife between Meitei and Kuki communities, and the resultant increase in casualties among civilians and security personnel in comparison to 2022.

Rising violence

In comparison to the 187 incidents reported in 2023, which resulted in the deaths of 35 civilians and seven security personnel, there were 137 insurgency-related incidents registered in the State in 2022, in which five civilians and one security force personnel lost their lives. According to the Ministry's data for 2024, until November 30, 203 incidents of violence had been reported, which led to three security personnel and 28 civilians being killed.

The counterinsurgency operations in 2023 also resulted in 33 insurgents being killed, while 184 insurgents were arrested and 49 weapons recovered. Another 80 members of insurgent outfits surrendered with 31 weapons, the report said.

On November 29, 2023, the Ministry and the Manipur government signed a peace agreement with one of the factions of the United National Liberation Front (UNLF), the oldest armed Valley-based Meitei insurgent group. The group advocates for secession of Manipur and largely operates from Myanmar.

Central deployment

Since ethnic violence erupted in the State on May 3, 2023, more than 250 people have been killed. In just the first three months, between May 3 and July 30, 2023, as many as 3,023 first information reports (FIR) pertaining to rape, sexual offences against women, murder, loot, and arson were registered in the State.

Though the issue of violence primarily relates to the maintenance of public order which is under the domain of the State, the Union government took a series of immediate and sustained actions to handle the situation, it said.

On June 4, 2023, the Union government appointed a Commission of Inquiry headed by a retired High Court Chief Justice, to inquire into the causes and spread of the violence.

SIVAGIRI ROW: WHAT IS THE OUTRAGE ABOUT?

The story so far:

Kerala Chief Minister Pinarayi Vijayan used the inaugural event of the 92nd Sivagiri pilgrimage at Varkala on December 31, 2024, to slam what he saw as attempts to appropriate social reformer Sree Narayana Guru into the Sanatana Dharma fold. The CM also seconded Sivagiri Madhom president Swamy Sachithananda's opinion that the regressive practice of making men remove their shirts before entering temples should be abandoned.

What happened?

Mr. Vijayan sought to equate Sanatana Dharma to the principles of Varnashrama Dharma which forms the bedrock of caste divisions in society. In his opinion, the attempt to portray Sree Narayana Guru as a champion of Sanatana Dharma ran counter to the renaissance leader's humanist message and his work to eradicate casteist oppression. He said that Sanatana Dharma, which commands the patronage of the powers that be, has resulted in the continuing oppression



of Dalits, backward classes and minorities in rural areas of north India. The Bharatiya Janata Party was quick to react with former Union Minister V. Muraleedharan accusing the CM of insulting Sanatana Dharma in a manner similar to Tamil Nadu Deputy CM Udhayanidhi Stalin.

Kerala Pradesh Congress Committee (KPCC) President K.Sudhakaran in a way echoed the CM's words when he spoke at Sivagiri. He said that attempts to tie down the Guru to Varnashrama Dharma have to be resisted. However, Opposition Leader V.D.Satheesan struck a discordant note, objecting to the CM's equating of Sanatana Dharma to Varnashrama Dharma. He accused the CM of attempting to give the patent of Sanatana Dharma, which is the collective tradition of all Indians, to the Sangh Parivar.

Why is Sivagiri Madhom important?

Sree Narayana Guru, who founded the Sivagiri Madhom over a century ago, is regarded as one of the foremost social reformers of Kerala, who played a key role in transforming a society steeped in casteism and untouchability into a progressive one with at least some levels of equality. In 1888, decades before temple entry movements and proclamations which allowed the oppressed castes entry into temples, Narayana Guru consecrated a Siva idol by the Aruvippuram river, in an effort to allow all castes to worship. When the consecration by a non-Brahmin led to opposition from various quarters, he explained that the idol was that of "Ezhava Siva, not a Brahmin Siva", referring to the Ezhavas, an oppressed caste. Despite this statement which was meant as a counter to specific circumstances, Sree Narayana Guru propounded the wider and inclusive 'One Caste, One God, One Religion for mankind' philosophy. He established the Sree Narayana Dharma Paripalana Yogam (SNDP Yogam) in 1903 for the educational and social upliftment of oppressed castes. A decade later, he would disassociate from the SNDP Yogam, disappointed that the organisation was being reduced for the representation of just the Ezhavas. Sivagiri, established by the Guru, is now a major pilgrimage centre for Ezhavas.

Why are political parties eager to court the Sivagiri seers?

The Ezhava community, classified as an Other Backward Caste constituting 23% of Kerala's population, are considered as traditional voters of the Communist Party of India (Marxist)-led LDF, with part of the votes going to the UDF. However, with the BJP's ascendancy in 2014, the Sangh Parivar has been making overtures to the community, and by extension to Sivagiri, as part of its larger strategy to make inroads into Kerala, which has remained electorally almost impenetrable to the BJP until recently. This has led to the Left as well as the Congress launching a counter-strategy to what they see as attempts to appropriate Narayana Guru and the Ezhava community into the larger Hindutva fold.

After the recent Lok Sabha elections, in which the LDF suffered a major defeat and the BJP made gains in left strongholds, the CPI(M) attributed the rightward drift in the backward-class Ezhava votes to the BJP as one of the major factors in its defeat. SNDP Yogam general secretary Vellappally Natesan stated that the Ezhava community had abandoned the LDF in the Lok Sabha elections in protest against the appeasement of minorities.

What is Sivagiri Madhom's stance?

The Sivagiri Madhom has always tried to maintain a considered, equidistant stance from all parties. At the annual Sivagiri pilgrimage, leaders of parties from across the political spectrum are accorded an opportunity to address the pilgrims. In recent years, Prime Minister Narendra Modi, Home Minister Amit Shah, Congress leaders Sonia Gandhi and Rahul Gandhi have addressed the



pilgrims. Even as the SNDP Yogam hailed the consecration of the Ram temple, Swamy Sachithananda decided to stay away from the Ayodhya consecration ceremony. The Madhom leadership has used its influence to raise its voice against the “Brahmanical dominance” in priesthood in major temples, criticising the limiting of the post of priests in major temples to the Brahmin community. Aware of the political heft of the community, the Madhom has held its cards close to its chest. This stand is not expected to change anytime soon.

INDIA AMONG 25 NATIONS WITH HIGH RELIGIOUS RESTRICTIONS

On an index measuring religion-related hostilities for 2022, India scored the highest among 198 nations, according to a report recently published by the Pew Research Centre. A higher score on the social hostilities index (SHI) indicates greater levels of religion-related harassment, mob violence, terrorism, militant activity, and conflicts over religious conversions or the use of religious symbols and attire. India scored 9.3 on a scale of 10 on the SHI. Scores above 7.2 are considered ‘very high’.

The report also assessed countries based on the government’s restrictions on religion, using the government restrictions index (GRI). The GRI measures laws, policies, and actions that regulate or limit religious beliefs and practices. These include policies banning particular beliefs or practices, the unequal granting of benefits to certain religious groups, and bureaucratic rules requiring religious groups to register to access benefits. India had a ‘high’ GRI score of 6.4 out of 10 in 2022. Scores above 6.6 are classified as ‘very high’.

Only 12% (25 countries) had ‘high’ or ‘very high’ GRI scores and SHI scores in 2022: India, Nigeria, Syria, Pakistan, Iraq, Egypt, Afghanistan, Israel, Libya, Palestinian territories, Ukraine, Bangladesh, France, Jordan, Iran, Sri Lanka, Somalia, Tunisia, Indonesia, Yemen, Laos, Nepal, Algeria, Maldives, and Armenia. In about 62% of the countries, including Canada and South Korea, the GRI and SHI scores were ‘low’ or ‘moderate’. In 16% of the countries, the GRI was ‘very high’ or ‘high’, but the SHI was ‘low’ or ‘moderate’; these include Cuba and China. In 10% of countries, the GRI was ‘low’ or ‘moderate’, but the SHI was ‘high’ or ‘very high’. These include Brazil and the Philippines.

The number of countries with ‘high’ or ‘very high’ GRI scores rose to 59 (30% of 198 countries) in 2022 from 55 in 2021. In 2007, when the index was started, only 40 nations (20%) had ‘high’ or ‘very high’ scores.

The number of countries with ‘high’ or ‘very high’ SHI scores rose to 45 (23% of all countries analysed) in 2022 from 43 countries in 2021 (Chart 3). In 2012, 65 countries had ‘high’ or ‘very high’ scores — the highest share (33%).

Harassment by governments — a broad measure encompassing verbal and physical pressure by authorities on religious groups — was among the most prevalent types of restrictions in 2022. It was reported in 186 of the 198 countries and territories studied (94%).

Government interference in worship was also widespread in 2022 and was reported in 170 countries and territories (86%). This includes policies and actions that disrupt religious activities, such as withholding permission to worship or denying access to places of worship. It also covers restrictions on religious practices and rituals not directly tied to worship, such as burial practices.

The report said that government restrictions and social hostilities often align closely, i.e., the lower the score on one index, the lower the score on the other too generally, and vice-versa.



INDIA SHUTS DOWN INTERNET 60 TIMES IN 2024, THE LOWEST IN EIGHT YEARS

India saw the lowest number of mobile Internet shutdowns in eight years in 2024, rounding out a period where the country became the most frequent deployer in the world of the measure, according to data from the Internet Shutdowns Tracker, maintained by the Software Freedom Law Centre, India.

The reduction — there have been 60 shutdowns so far this year, with 96 last year — comes with fewer shutdowns imposed in Manipur and Jammu and Kashmir, where administrations have imposed a disproportionately high number of curbs in past years.

In the last month, shutdowns were imposed in Ambala, Haryana, as a result of planned farmer agitations, and extended in nine districts of Manipur owing to “the prevailing law and order situation in the State”. The most Internet shutdowns — 132 — happened in 2020, following the revocation of Article 370 of the Constitution the previous year. An extension of an Internet shutdown is counted by SFLC as a fresh shutdown, as these curbs are usually imposed for a fixed number of days at a time.

Digital rights activists have bemoaned the constant use of shutdowns, arguing they are unnecessary and ineffective as a response to unrest. What’s more, States do not always publish the shutdown orders as ordered by the Supreme Court. “Four years after the historic Bhasin versus Union of India judgment, officials continue to fail to publish shutdown orders and have been repeatedly corrected by courts for failing to comply,” the advocacy group Access Now said in May.

“The contribution of the Internet for the well-being of citizens has to be balanced with the need to prevent misuse by anti-social elements requiring temporary suspensions of internet services,” Union Minister of State for Communications Pemasani Chandra Sekhar said in a written Rajya Sabha answer on December 12.

No study

The Union government reiterated in Parliament in the Winter Session that it did not have centralised data on Internet shutdowns across India and that it had not conducted any study on the efficacy of the measure. The Department of Telecommunications, under the Union Ministry of Communications, has issued the rules under which State and Union Territory authorities may order Internet shutdowns.

The lack of any study has been particularly marked as digital rights activists have pushed back against the practice, with shutdowns being employed dozens of times each year. It is also notable as parliamentarians have been pushing on whether a study has been conducted for years.

In November 2019, former Minister for Communications Ravi Shankar Prasad said in a written Rajya Sabha response that the government “has not undertaken any evaluation or study to assess the economic impacts of Internet shutdowns”. Then Minister of State for Communications Sanjay Dhotre said in the Upper House in February 2020 that “records related to Internet shutdowns ordered by State governments are not maintained by either DoT or the Ministry of Home Affairs”.

Mr. Dhotre said the same month that “DoT has not conducted any study on the effect of internet shutdown on economy, tourism, education sector etc”. Similarly in 2021, he had said, “DoT has not conducted any study to calculate the economic cost of Internet shutdowns in the country.”



In 2022, former MoS for Communications Devusinh Chauhan said that “DoT has not commissioned any study to assess the efficacy of internet shutdowns in dealing with public emergencies”.

WATER WOES

An annual assessment by the Central Ground Water Board (CGWB) on the state of groundwater, and its quality, has some worrying portents. First, the number of districts with excessive nitrate in their groundwater has risen from 359 in 2017 to 440 in 2023. This translates to a little more than half of India’s 779 districts having excessive nitrate, or more than 45 mg/L (milligram per litre). There are two major concerns with excess nitrate content: first, methemoglobinemia, or a reduced ability of red blood cells to carry oxygen. This sometimes causes ‘Blue Baby Syndrome,’ in infants. The bigger problem is environmental: once nitrates in groundwater rise to the surface and become part of lakes and ponds, algal blooms throttle the health of aquatic ecosystems. What the CGWB found, from analysing 15,239 groundwater samples across the country, was that close to 19.8% samples had nitrates — nitrogen compounds — above safe limits. However, this proportion has not shifted much since 2017, when 21.6% had excessive nitrate (13,028 samples).

Rajasthan, Karnataka and Tamil Nadu reported the largest extent of nitrate contamination, with 49%, 48% and 37% of the samples reporting numbers beyond the limit. Rajasthan, Madhya Pradesh and Gujarat have a perennial nitrate problem, primarily from geological factors, with relative levels fairly constant since 2017, the report says. However regions in central and southern India are reporting a rise, which is a reason for worry. Through the years, several studies have established the correlation between elevated nitrate levels and the practice of intensive agriculture. Other significant chemical contaminants affecting groundwater quality were fluoride and uranium. Fluoride concentrations exceeding the permissible limit were “a major concern” in Rajasthan, Haryana, Karnataka, Andhra Pradesh and Telangana. The report drew attention to the fact that States with over-exploited groundwater blocks — where extraction is more than replenishment — were more likely to have excessive chemical contaminants. Overall, the country’s degree of groundwater extraction is 60.4%, or roughly the same as it has been since 2009. About 73% of the blocks analysed for groundwater levels are in the ‘safe’ zone, meaning that they are replenished enough to compensate for the water drawn out. While it is a good sign that India now has a robust, scientific system of assessment to monitor the health of groundwater blocks annually, efforts are lacking in getting States to act on these findings. There needs to be more concerted awareness programmes led by the highest levels of leadership to contain the crisis.

IN BIHAR’S CIVIL SERVICES EXAM, A TALE OF THE YOUNG AND THE HOPELESS

In the run-up to the 2024 Lok Sabha election, countering the Opposition parties’ pitch on the caste census, Prime Minister Narendra Modi had said that, for him, there are only four castes: Poor, farmers, women — and youth. The emphasis on youth, an underlining of their issues and concerns, could also be found in the manifestos of parties and leaders’ speeches. However, in 2024, like many years before it, across states, the young were let down by leaders and parties who turned an unseeing eye to a recurring pattern — paper leaks and allegations of cheating and foul play leading to exam cancellations and students’ protests, to no avail. The controversy over the Bihar Public Service Commission (BPSC) preliminary examination held on December 13 is only the latest in a dismal series.



One of the centres in Patna saw a disruption — it was alleged that the question paper had been leaked. Soon after, reports of irregularities poured in from other centres, sparking students' protests. On December 19, the Commission decided to conduct a re-examination only for one centre. As the protests intensified, leaders like Prashant Kishor, founder of the state's fledgling Jan Suraj Party, along with several educators, put their weight behind the students' demands; RJD's Tejashwi Yadav asked the Commission to conduct fresh prelims across the state. The BPSK controversy, however, is just one more in a long list of such irregularities. The year 2024 saw the NEET-UG fracas, followed by the cancellation of the NET and NEET-PG exams. Exams conducted for state government recruitments in UP, Rajasthan, Maharashtra, and Tamil Nadu faced similar controversies. The Centre introduced the Public Examinations (Prevention of Unfair Means) Act (2024) to lay down guardrails.

But is it enough to pass a law? Ever since the uproar over the Vyapam scam in Madhya Pradesh in 2013 — its ghosts are still to be laid to rest — few political parties have made it a political or electoral issue. For the aspirants, many of whom belong to marginalised castes and classes, these exams are a way to achieve social mobility, against daunting odds. In a country of large economic disparities, and when job creation is not picking up in the private sector, they represent a possibility of empowerment for millions. Crammed into general compartments of trains and in overcrowded buses, they reach the exam centres armed only with their aspiration — between 2014 and 2022, for instance, only 0.33 per cent of the applicants got government jobs. The voices of the students in Bihar, and other states, must be heard and heeded. In a country of the young, one that is on the move, much is at stake.

CENTRE NOT TO RELEASE ITS 2023 GOOD GOVERNANCE INDEX, WILL FOCUS ON 2025

The Centre has decided not to release the Good Governance Index 2023, the biennial ranking of states and Union Territories (UTs) scheduled to be released during Good Governance Week (December 19 to December 25), and is now planning to publish the next edition in 2025, The Indian Express has learnt.

- Launched on December 25, 2019, the birth anniversary of late prime minister Atal Bihari Vajpayee which is observed as Good Governance Day, the index covers over 50 indicators across sectors, including agriculture, economic governance, public health, and citizen-centric governance. Tamil Nadu and Gujarat got first place among big states in the 2019 and 2021 rankings, respectively.
- As recently as December 7, the Department of Administrative Reforms and Public Grievances (DARPG) of the Ministry of Personnel, Public Grievances and Pensions was planning on releasing the 2023 index. Announcing the national campaign for redressal of public grievances, 'Prashasan Gaon Ki Ore', from December 19 to December 24, DARPG said in a press release that "The Assessment Report on Special Campaign 4.0, Good Governance Index 2023 and Annual Report of CPGRAMS will be released", during the week.
- The 2021 index, which was released on December 25, 2021, by Union Home Minister Amit Shah, covered 58 indicators across 10 sectors. While Gujarat topped the composite ranking, 20 states showed an improvement in the composite scores from 2019.

Do You Know:



- In 2014, the Union government announced that December 25 would be celebrated as “Good Governance Day.” This day honors the birth anniversary of former Prime Minister Atal Bihari Vajpayee.
- According to a Good Governance Index Report submitted to the Department of Administrative Reforms and Public Grievances in the Ministry of Personnel, Public Grievances and Pensions, “Good governance can be referred as an effective and efficient process of decision making and the process by which decisions are implemented (or not implemented) keeping the amelioration of citizens as the topmost priority. Resource allocation, creation of formal establishments, setting up rules and regulations etc., are part of achieving this goal.”
- Good Governance Week took place from December 19, 2024, to December 24, 2024. As part of the activities during this week, the nationwide campaign “Prashasan Gaon Ki Ore” was launched to address public grievances and enhance service delivery across all districts, states, and union territories of India.

‘SUICIDES AMONG CISF PERSONNEL DIP 40% DUE TO PROACTIVE MEASURES’

Proactive measures launched by the Central Industrial Security Force (CISF) led to a 40% decline in suicide rates among its rank and file, sources said. According to National Crime Records Bureau (NCRB) data, the national suicide rate stood at 12.4 per lakh people in 2022, while in CISF, it has been reduced to 9.87 per lakh people in 2024.

“Suicide of force members is a critical concern within Central Armed Police Forces (CAPFs). Stress, prolonged family separation and work-related pressures besides personal issues often contribute to this complex issue,” senior sources said.

In personalised engagements, commanding officers regularly visit duty posts to foster direct communication to hold daily “briefing–debriefing” to promptly identify and address signs of distress.

The CISF also brought in an online grievance portal, which allowed timely monitoring of grievances at all levels (up to the level of DG), ensuring timely resolution of grievances, along with mental health support through 24x7 tele-counselling and personal counselling, sources said.

Till September 2024, around 4,200 CISF personnel received help through this facility. Apart from this, one-to-one counselling facility is also implemented. A comprehensive mental health study was conducted in collaboration with AIIMS, New Delhi and actionable recommendations are being implemented at unit level.

In India, the issue has escalated over the years, as evidenced by the NCRB data. All India suicide rates rose from 9.9 per lakh population in 2017 to 12.4 per lakh in 2022, as per NCRB Report — accidental deaths and suicides in India, 2022.

DRAFT RULES RELEASED, GOVT BRINGS BACK LOCALISATION OF PERSONAL DATA

Data localisation, a bugbear for Big Tech, that was removed from the Data Protection Act, 2023, Friday made a comeback under the draft rules released Friday. The draft rules come more than a year after the Digital Personal Data Protection Act received the President’s assent in August 2023.



- The draft Digital Personal Data Protection Rules, 2025, propose that the Central Government will specify the kind of personal data which can be processed by “significant data fiduciaries” subject to the restriction that such personal data and traffic data related to its flow is not transferred outside the territory of India. A committee, to be formed by the government, will determine such data.
- While data fiduciaries are companies and entities which collect and process personal data, “significant data fiduciaries” will be determined on the basis of the volume and sensitivity of personal data they process, and the risks they might have on sovereignty and integrity of India, electoral democracy, security, and public order. All major tech companies including Meta, Google, Apple, Microsoft, and Amazon are expected to be classified as significant data fiduciaries.
- The draft rules have also proposed certain safeguards for citizens when their data is being processed by the Central government and its agencies, suggesting that such processing should happen in a “lawful” manner.
- The Data Protection Act had come under scrutiny for granting wide-ranging exemptions to the government or its agencies while processing citizens’ personal data on grounds of ‘national security’, ‘friendly relations with other states’, and ‘public order’, among other things.
- Under the Data Protection Act cleared in August 2023, the government had said it would simply notify the territories where personal data of Indians can not be taken to. This was seen as a big win following immaculate lobbying efforts by the tech companies against a provision in an older version of the draft law which mandated strict localisation mandates.
- Under the data protection Bill, first introduced in 2019, and later withdrawn from Parliament in 2022, companies were required to store a copy of certain sensitive personal data – like health and financial data – within India and the export of undefined “critical” personal data from the country was prohibited. With the fresh draft rules, these localisation requirements have made a re-entry.
- The draft rules also allow tech companies to implement a mechanism for collecting “verifiable” parental consent before processing personal data of children. Effectively, the government has refrained from proposing a mechanism from its side, and has left it to the companies to adopt a system of their choice, after social media companies complained that it could be a difficult provision to implement.
- In the event of a data breach, data fiduciaries will have to intimate impacted individuals “without delay” a description of the breach, including its nature, extent and the timing and location of its occurrence; the consequences relevant to the impacted user, that are likely to arise from the breach; and the measures implemented and being implemented to mitigate risk among other things.
- At present, India lacks a comprehensive legislation specifically addressing the issue of data protection. The regulation of personal data usage falls under the purview of the Information Technology (IT) Act of 2000. The insufficiency of this framework in safeguarding personal data has been duly noted.
- In the year 2017, the central government established a Committee of Experts on Data Protection, which was led by Justice B. N. Srikrishna. The primary objective of this committee was to investigate and analyse matters pertaining to data protection within the country. The report was submitted by the Committee in July 2018.



- On August 9, 2023, the Rajya Sabha “unanimously” passed the Digital Personal Data Protection Bill (DPDP), 2023 and drew the curtains on a journey that began roughly a decade ago. In the process, it has predictably provoked mixed reactions.
- One of the overarching goals of the legislation, by the government’s own admission, is to strike a balance between protecting personal data and enabling the processing of such data for lawful purposes, so as to enable innovation and promote economic growth. In doing so, the government has largely exempted itself from the purview of the law, in letter and spirit.
- The Act declares that for the “security of the state, maintenance of public order or preventing incitement to any cognisable offence relating to any of these, and the processing by the central government of any personal data that such instrumentality may furnish to it”, the state falls outside its scope.

HOW IN-FLIGHT INTERNET WORKS

Air India rang in the new year by announcing the rollout of Wi-Fi Internet connectivity services on board domestic and international flights serviced by select aircraft in its fleet. This makes the airline the first in India to offer Internet connectivity on domestic flights.

- Wi-Fi will be offered free of charge on domestic flights operated by the select aircraft for a limited introductory period. Over time, Air India plans to progressively offer the service on other aircraft in its fleet.
- On-board internet services are fast becoming a standard offering, particularly among major full-service carriers (FSCs) globally. Air India, which returned to the Tata Group three years ago, has big ambitions to be counted among the world’s foremost airlines.
- For now, Wi-Fi will be available on the airline’s Airbus A350, Boeing 787-9, and select Airbus A321neo aircraft. The airline was already offering Internet connectivity on board international flights operated by these aircraft as part of an ongoing pilot programme.

Do You Know:

- In-flight connectivity systems primarily use two kinds of technologies — ground-based cellular towers, also known as air-to-ground (ATG) technology, and satellite-based connectivity. Both require special antennae and other equipment to be installed on the aircraft.
— In the former, an antenna — usually placed around the plane’s belly, picks up signals from the nearest tower on the ground, or ground receiver, to provide connectivity on board the aircraft. In some senses, this is similar to how our devices access wireless Internet on the ground.
- Multiple Wi-Fi antennae are located inside the aircraft cabin, which get signals from passengers’ devices. From these in-cabin antennae, the signals are sent to an on-board server. Till this point, the process is the same for both ATG and satellite-based connectivity.
- In the case of a satellite-based connectivity system, the signals are then transmitted through an antenna on top of the aircraft to a satellite, which relays them to a ground station or teleport.
- In response, signals are sent from the ground station to the satellite, which relays them to the aircraft. In ATG technology, the signals from the server on board the aircraft are transmitted



directly to on-land cellular towers using the antenna underneath the aircraft. The towers then respond with signals to the aircraft.

GPS INTERFERENCE ON AIRCRAFT RISING; 10% OF FLIGHTS REPORT LOW NAVIGATION ACCURACY OVER INDIA'S BORDERS

Instances of GPS interference on passenger aircraft, including 'spoofing' with false signals, are on the rise over conflict zones globally, including on India's borders with Pakistan, which are among the top sites for such occurrences, according to OPSGROUP, a voluntary group of 8,000 aviation personnel, including pilots, who share information on risks to flights.

The GPSjam portal also lists India's borders with Pakistan and Myanmar as among the top five regions where more than 10% of aircraft reported low navigation accuracy.

'Spoofing' is a form of cyberattack that includes false GPS signals to mislead navigation equipment. It is seen in conflict zones and is used to attack drones that are increasingly used in modern warfare. Interference with GPS was recently seen on the Embraer jet involved in the Azerbaijan Airlines crash on December 25 in which 38 people on board were killed. On Saturday, Russian President Vladimir Putin apologised to his Azerbaijan counterpart, Ilham Aliyev, for the "tragic incident that occurred in Russian airspace" and said that Russian air defence was repelling attacks from Ukraine's combat drones in Russian towns.

According to a report published by the OPSGROUP in September 2024, the first series of GPS spoofing was identified in September 2023 in the area of northern Iraq, centred on Baghdad. In 2024, new spoofing locations were identified in the Black Sea region, western Russia and the Baltics, the North and South Korea border areas, western Ukraine, and the India-Pakistan border.

The report said there was "daily spoofing" since May 2024 in the Delhi Flight Information Region. It also ranked this area at the ninth position among the top 20 Flight Information Regions, with 316 aircraft impacted by spoofing between July 15 and August 15. The rank was based on the analysis of 17,000 flights.

Globally, instances of spoofing have increased from 300 flights impacted daily in January to 1,500 flights impacted daily by August, the report said.

In an advisory in November 2023, the Directorate General of Civil Aviation (DGCA) asked airlines to develop standard operating procedures and provide bi-monthly reports on such occurrences.

This data is not available publicly. The Hindu requested the Ministry of Civil Aviation to share this data, but there was no response till the time of going to press.

One IndiGo pilot reported losing both GPS systems for a few minutes while he was flying out of Amritsar earlier this month.

Several other pilots have said that "nearly every flight" to Amritsar either experiences interference or spoofing.

Flights to Dubai, Doha and other Gulf destinations from northern parts of India also experience false GPS signals, as do flights to Bangkok, Vietnam, and Hong Kong while crossing Myanmar.

Pilots have also said flight tracking website flightradar24 can sometimes show, albeit inaccurately, that there had been a flight diversion mid-air because of loss of data used to indicate the aircraft's



location to other aircraft and air traffic control, resulting in an immediate message from the airline's operation control centre.

While aircraft systems are built with several redundancies, including the Inertial Reference System that is also used for navigation, which continue to operate safely for up to five hours even if a primary system fails, one pilot described the phenomenon of GPS spoofing and interference as one of flying with "one's hands tied to one's back".

Spoofing the GPS could also result in errors in the speed display, or trigger a terrain warning by tricking the navigation system into believing it's at a dangerously low altitude or in proximity to terrain.

SCORPENE-CLASS SUBMARINE AMONG 3 FRONTLINE PLATFORMS TO BE INDUCTED BY NAVY ON JAN. 15

The Indian Navy is set to commission three frontline platforms into service at the Naval Dockyard, Mumbai, on January 15. These are the sixth and last Scorpene-class submarine, *Vagsheer*; the fourth and last of the Project-15B stealth destroyers, *Surat*; and the lead ship of the Project-17A stealth frigates, *Nilgiri*.

"This historic event will provide a significant boost to the Indian Navy's combat potential while underscoring the country's pre-eminent status in indigenous shipbuilding. The successful commissioning of these advanced warships and submarines highlights the rapid progress made in warship design and construction, cementing India's position as a global leader in defence manufacturing," the Navy said in a statement.

All three platforms had been manufactured at Mazagon Dock Shipbuilders Ltd. (MDL), Mumbai. While the two ships are indigenously designed, the Scorpene-class submarines are manufactured in India under licence from Naval Group of France.

Nilgiri, the lead ship of Project-17A, is a major advancement over the Shivalik-class frigates, incorporating significant stealth features and reduced radar signatures through state-of-the-art technology. The Project-15B destroyer, *Surat*, is the culmination of the follow-on class to the Kolkata-class (Project-15A) destroyers, featuring substantial improvements in design and capabilities. Both ships were designed by the Navy's Warship Design Bureau and equipped with advanced sensors and weapon packages developed primarily in India or through strategic collaborations with leading global manufacturers, the Navy stated.

Aviation facilities

"The vessels have undergone rigorous trials, including machinery, hull, fire-fighting, and damage-control assessments, as well as proving all navigation and communication systems at sea, making them fully operational and ready for deployment."

Equipped with modern aviation facilities, *Nilgiri* and *Surat* can operate a range of helicopters, including Chetak, Dhruv, Sea King, and the newly inducted MH-60R, during both day and night operations. Features such as a Rail-Less Helicopter Traversing System and a Visual Aid and Landing System ensure seamless operations under all conditions, the Navy said. "These ships also include specific accommodations to support a sizeable complement of women officers and sailors, aligning with the Navy's progressive steps toward gender inclusion in frontline combat roles."



CENTRE INKS CONTRACTS FOR AIP, TORPEDOES FOR SUBMARINES

The Defence Ministry on Monday signed two contracts related to Scorpene-class submarines worth ₹2,867 crore.

The first contract is for the construction of the air independent propulsion module (AIP) developed by the Defence Research and Development Organisation (DRDO), and its integration aboard. The second contract is for the integration of the electronic heavyweight torpedo being developed by the DRDO.

“The contract for construction of AIP Plug and its integration was inked with Mazagon Dock Shipbuilders Limited, Mumbai, [which is] worth around ₹1,990 crore, while the contract for integration of EHWT, being developed by DRDO, was signed with Naval Group, France at an approx. cost of ₹877 crore,” a Defence Ministry statement said.

An indigenously developed AIP module, after delays, is awaiting fitment on Scorpene submarines. Towards this, the DRDO has already entered into an agreement with the France-based Naval Group, the original manufacturer of Scorpene.

Enhanced submarines

The construction of the AIP Plug and its integration would enhance the endurance of conventional submarines, and would generate employment of nearly three lakh man days, the Ministry said. The integration of the EHWT would be a collaborative effort between the Indian Navy, the DRDO, and the Naval Group, the statement added.

The submarines have been operating without a dedicated, modern heavyweight torpedo so far, as the torpedoes meant to be procured from the company were embroiled in a corruption scandal.

THE RACE FOR FIGHTERS: THE IAF'S DILEMMA

In the last two weeks, taking the world by surprise, China unveiled a series of high technology platforms establishing its technological supremacy. These include two stealth fighter jets, the launch of an amphibious naval ship, a new “comprehensive” scientific research ship for global deep-sea exploration, a supersonic civil jet prototype and a new bullet train dubbed the world’s fastest. The timing couldn’t have been starker, highlighting the widening technological gap with the Indian Air Force (IAF) which is struggling to maintain its fighter squadron strength as modernisation is plagued by delayed deliveries.

Chinese military modernisation

Last week, videos emerged on social media of two stealth fighter jets in tail-less configuration. One of them a massive jet with delta-wing design, featuring three engines hinting at a likely long range, flying over Chengdu in Sichuan province went viral on social media ‘X’. Videos of the second smaller jet featuring a smaller twin-engine design with swept wings emerged a day later. Reports suggest that the larger jet was designed by Chengdu Aircraft Corporation while the smaller jet is from the rival Shenyang Aircraft Corporation. However, there has been no official comments from China or from their state media so far on the developments.

The People’s Liberation Army Air Force (PLAAF) of China has already fielded two fifth generation fighter jets, the medium J-35 and the heavy J-20, becoming the only country other than the U.S. to



have more than one fifth gen fighter. With the two new jets, dubbed by many commentators as sixth gen-fighters which is debatable, China has, undoubtedly, taken giant strides in the race.

The recently released report to the U.S. Congress on the military and security developments involving the PRC for 2024 noted that the PLAAF and PLAN (Navy) Aviation together constitute the largest aviation force in the Indo-Pacific region. “The PLAAF is rapidly approaching technology typical of U.S. standards,” it noted. The PLAAF and PLAN Aviation continue to field greater numbers of fourth-generation aircraft (now more than 1,300 of 1,900 total fighters, not including trainers) and probably will become a majority fourth-generation force in the next several years, the report added. In addition, the J-35 and J-20 are being added at a phenomenal rate and flight testing of the latest jets indicate a fairly advanced state, and that they have been under development for sometime.

The IAF’s modernisation plan

The IAF is at 31 fighter squadrons as against the sanctioned strength of 42 squadrons, desperately awaiting new inductions and with no fifth gen fighter in the line-up for at least a decade, the only outlier among major countries.

Recent reports state that Pakistan has approved the procurement of 40 J-35s from China.

In an uncanny coincidence, very recently the Defence Ministry has appointed a committee led by the Defence Secretary to look into the overall capability development of the IAF. India has an ambitious plan lined up for the acquisition of over 500 fighter jets, a bulk of them to be indigenously designed and manufactured, majority of them for the IAF. However, these are at various stages of development and manufacturing and their timely deliveries are critical. Of these, the LCA variants will constitute the bulk. There are 83 LCA-Mk1As on order but their deliveries have been delayed as the F-404 engines by General Electric (GE) have been delayed. A deal for 97 additional Mk1As is under discussion. The LCA-Mk2, fifth generation fighter the Advanced Medium Combat Aircraft (AMCA) and the Twin Engine Deck Based Fighter (TED-BF) for the Navy all have very ambitious development timelines but given the complexity and track record, it has to be seen how soon they are ready and available for induction.

The Defence Research and Development Organisation (DRDO) is working on the indigenous development of LCA-Mk2 aircraft and the AMCA, the Defence Ministry informed the Parliamentary standing committee on defence as per a report tabled earlier this month. “The deliveries for LCA-Mk2 and AMCA are expected to commence only into the next decade once the development cycle is successfully completed.”

It must be noted that of the current 31 squadrons, the phase out of two MIG-21 squadrons has been extended due to the delayed deliveries of LCA-Mk1A. The Jaguars, Mirage-2000s and MIG-29s will begin going out by the end of the decade. For instance, by 2027-28, the first of the MIG-29s, inducted in the late 1980s, will start going out and by early 2040s, when most of these types will be phased out, some of the early lot of SU-30s will also start going out. The IAF has in all contracted 272 Su-30s, and a deal to procure 12 additional Su-30MKIs to replace the ones lost in accidents has just been signed while a major Sukhoi upgrade programme is in the final stages of approval.

Another critical procurement programme that hasn’t progressed for several years is the 114 Multi-Role Fighter Aircraft (MRFA), a foreign jet intended to be manufactured in India with significant technology transfer. The Request For Information (RFI) for 114 MRFA was issued in



April 2019 to global aircraft manufacturers but has since made no progress with even the preliminary Acceptance of Necessity (AoN) from the Government yet to be received. Given the long timelines for the procurement process, and factoring in the time to set up facilities in India and for the jets to roll out, the MRFA is unlikely to be available in significant numbers till the middle of the next decade.

As reported by *The Hindu* recently, in the backdrop of the controversy in the procurement of 36 Rafale fighter jets, the government is looking at a procurement model that is transparent and non-controversial for the MRFA.

Underscoring this urgency, IAF Air Chief Marshal A. P. Singh said in October that the MRFA was “needed as of yesterday”. The larger and more capable LCA-Mk2 is under development and is supposed to do its first flight this October, with December 2027 to be the end of research and development for LCA-Mk2. “If these timelines are met and the MRFA is signed parallelly we are OK. We are not badly off. But if these timelines are pushed, then we need to look at alternatives,” the Air Chief had stated.

In October 2022, then IAF chief ACM V. R. Chaudhari conceded that even with the LCA-Mk1A, LCA-Mk2 and the MRFA “we will still be at 35-36 (squadrons) by middle of next decade.”

It is pertinent to note that, barring the AMCA which will take sometime the LCA variants and the MRFA are all four gen plus fighters.

On the delay in the LCA-Mk1A, a representative of the Ministry informed the House Panel that it “worries all of us”. “LCA Mark 1 is dependent on GE-404 engines. The supply of GE-404 engines has been adjusted by GE for the last two years. Due to COVID, their supply chain has broken down. They have not been able to resume yet. They have promised that they will start giving GE engines from March this year, next year onwards, the supply would get stabilised,” the representative submitted.

As soon as the engine problem is sorted out, we have planned to make 24 LCAs every year and then 30 every year, the representative stated. On the agreement between Hindustan Aeronautics Limited (HAL) and GE for the licence manufacture of the F-414 engines in India the Ministry representative expressed confidence that it should get it signed in the “next three to four months.”

Aero-engine troubles

An aero-engine is likely to remain the single major dependency and the country’s Achilles heel for a very long time. Imported engines, directly or ‘co-manufactured’ will power all indigenous jets and helicopters till the end of this century at the current rate. The license manufacturing for the F-414 engine or the new 110KN engine likely to be co-developed and co-produced with France for the AMCA-Mk2 will still mean that India would be dependent on them for the most critical parts.

It will essentially be between France and the U.S. — U.S. for a part of the fighter fleet and France for the remainder of the fighter fleet and for almost all of the helicopter segment as more indigenous platforms come in.

The country can’t claim to be fully self-reliant till it can field an aero-engine that is completely designed and developed in-house.



ARMY INSTALLS SHIVAJI STATUE ON PANGONG LAKE BANK; LADAKH COUNCILLOR, OTHERS QUESTION ITS RELEVANCE

On December 26, the statue of Chhatrapati Shivaji Maharaj was inaugurated on the banks of Pangong Lake at an altitude of 14,300 feet, the Leh-based 14 Corps said on X on Saturday.

“The towering symbol of valour, vision and unwavering justice was inaugurated by Lt. Gen. Hitesh Bhalla... General Officer Commanding (GOC), Fire and Fury Corps and Colonel of the Maratha Light Infantry. The event celebrates the unwavering spirit of the Indian ruler, whose legacy remains a source of inspiration for generations,” it added.

According to defence sources, the statue is within the location of a Maratha unit. It was built with voluntary contributions from serving and retired personnel of the unit.

Questioning the relevance of Shivaji at Pangong Lake, several veterans and others noted that Zorawar Singh would have been a more appropriate choice. However, defence sources said infantry units have a long tradition of placing unit-related icons within their premises to motivate soldiers.

“There are the statutes (or laws) of war, but of late our armed forces are studying the ‘statues of war’ ...,” Major-General Birender Dhanoa (retd) said in a post on X. He questioned, “Why was a unit and ‘colonel of the regiment’ affair publicised on social media? Are all fixed class units erecting statues across the Corps Z (zone) that are in keeping with their ancestral satraps? If not then social media isn’t the place for a one off.”

Another veteran Colonel Sanjay Pande observed that Zorawar Singh went through Pangong Tso to Khurnak Fort, established posts right up to Mansarovar. “He died fighting in Tibet. Leh Fort is called Zorawar Fort...Zorawar Singh fought wars 180 years back, weather was as found today. He deserves to be there.”

Sajjad Kargili, a political activist, said on X that there was no cultural or historical relevance of Shivaji in Ladakh. “While we respect his legacy, imposing such cultural symbols here is misplaced. We would appreciate the installation of statues honoring local historical figures like Khree Sultan Cho or Ali Sher Khan Anchen and Seenge Namgyal. However, even these should not be placed in environmentally sensitive areas like Pangong, which require careful preservation,” he said.

WHY BETTER PREDICTION OF CYCLONE INTENSITY, HEAVY RAINFALL IS NEEDED

Tropical cyclones rank among the most devastating natural phenomena, with the potential to inflict significant destruction and loss of life. While the North Indian Ocean basin experiences fewer cyclones compared to other regions, it remains highly susceptible to their impacts due to densely populated coastal areas. This vulnerability was tragically highlighted by the Bhola cyclone of 1970, the deadliest tropical cyclone on record. Observational evidence indicates shifts in the patterns, intensity, and frequency of tropical cyclones, underscoring the need for adaptive measures in vulnerable regions.

Climatologically, the Bay of Bengal experiences a higher frequency of tropical cyclones compared with the Arabian Sea. In recent years, there has been a 52% increase in the frequency of cyclonic storms in the Arabian Sea, alongside a threefold rise in the duration of very severe cyclonic storms. There is a greater likelihood of cyclonic storms intensifying into severe cyclonic storms. In the



satellite era, the accumulated cyclone energy over the North Indian Ocean has shown an increasing trend. These trends are driven by environmental factors such as rising ocean heat content and decreasing vertical wind shear.

In future climate change scenarios, anthropogenic climate change is likely to fuel more powerful tropical cyclones. Additionally, the tropical cyclone precipitation rates are projected to rise, driven by increased atmospheric moisture associated with global warming. Ocean basins may also experience a higher frequency of rapid intensification events, a poleward migration of the latitude of maximum intensity, and a slowing of the forward motion of tropical cyclones.

Cyclone Fengal created its place in history with its unusual trajectory and devastating impact on Tamil Nadu's coastline. Emerging as a low-pressure area over the southeast Bay of Bengal on November 23, it made landfall near Puducherry on the night of November 30. Uniquely, the system stalled upon reaching the coast due to a rare balanced steering flow, allowing it to maintain its intensity even after landfall until the evening of December 1. This persistence was fuelled by abundant moisture from saturated coastal soils, already soaked by preceding rains. The stalling cyclone unleashed unprecedented rainfall, with several locations across Puducherry and Villupuram districts recording 40-50 cm in a single day. Neighbouring districts, including Cuddalore and Tiruvannamalai, also experienced torrential downpours exceeding 20 cm within 24 hours. The deluge submerged vast stretches of farmland, resulting in catastrophic losses for farmers and severely impacting local livelihoods.

The India Meteorological Department (IMD) has established an impressive track record for accurately predicting the track and landfall of tropical cyclones over the last decade. Despite this, Fengal presented significant forecasting challenges due to its unconventional track, variable speed, and intense rainfall during landfall. While IMD successfully predicted the landfall near Puducherry nearly three days in advance, certain aspects of the cyclone's behaviour were difficult to forecast. For instance, its north-eastward movement on November 27 was not accurately predicted, and the slow progression or stalling near the coast also posed challenges.

More broadly, weather prediction models often struggle with forecasting the heavy rainfall associated with tropical cyclone landfalls, a limitation that was particularly evident in Fengal's case. None of the prediction models accurately predicted the exceptional 24-hour rainfall totals exceeding 40 cm recorded in some areas. Limitations in observational data over oceans, and the complex cloud dynamics within the cyclone contribute to forecasting difficulties, necessitating continuous advancements in modeling techniques and real-time data assimilation. Two critical areas requiring further research are the prediction of tropical cyclone intensity, especially rapid intensification and forecasting of heavy rainfall associated with landfall. These challenges are becoming increasingly urgent as IPCC climate models project more intense cyclones, accompanied by heavier precipitation and slower translation speeds.

Critical need

The post-monsoon cyclone activity of 2024 highlights the critical need for sustained investments in advanced forecasting technologies and research to address existing knowledge gaps.

Despite significant progress, achieving precise tropical cyclone predictions remains a great challenge. It is imperative to prioritise measures that safeguard lives, livelihoods, and ecosystems from the devastating impacts of tropical cyclones.



UNION HEALTH MINISTRY MONITORS HMPV OUTBREAK IN CHINA, ASSURES SITUATION IS NOT WORRISOME YET

The Union Health Ministry said on Friday that it was closely monitoring the alleged outbreak of Human Metapneumovirus (HMPV) in China. The Ministry said while China had reported a rise in respiratory illness, particularly HMPV, India had not registered any unusual spike in winter respiratory diseases.

Five years after the COVID pandemic, China is experiencing a surge in HMPV cases, particularly in children under 14 years. Symptoms include cough, fever, and shortness of breath, with potential complications like bronchitis and pneumonia. The country has seen cases rise in its northern provinces, *Reuters* had reported. Cases of HMPV had been reported in 2011-12 in the U.S., Canada, and Europe.

The Ministry's National Centre for Disease Control is closely monitoring respiratory and seasonal influenza cases in the country and is in touch with international agencies, noted a senior official.

Meanwhile, Director-General of Health Services Atul Goel informed reporters on Friday that no case of the respiratory illness — HMPV — has been reported in the country yet. Stating that the government was closely monitoring news about the possible HMPV outbreak in China, he added that as of now, there was no cause for alarm.

"HMPV is like any other respiratory virus that causes flu-like symptoms," said Dr. Goel, adding that respiratory illnesses are common in winters and hospitals in India are equipped to deal with them.

'No major cases'

"Special medicines are not needed as there are no anti-viral drugs against this. There are no major cases, in hospitals or as per Indian Council of Medical Research data," he added.

According to the Centres for Disease Control and Prevention, the public health agency of the U.S., HMPV can cause upper and lower respiratory disease in people of all ages, especially among young children, older adults, and people with weakened immune systems.

Discovered in 2001, the HMPV belongs to the Pneumoviridae family along with respiratory syncytial virus (RSV). Broader use of molecular diagnostic testing has increased identification and awareness of HMPV as an important cause of upper and lower respiratory infection.

GOVT PLANNING TO RAMP UP FOOD TESTING INFRASTRUCTURE TO BOOST EXPORTS: OFFICIAL

The Commerce Ministry is planning to expand food-testing infrastructure to enhance exports, a senior government official said on Wednesday. The Export Inspection Council (EIC), under the ministry, has initiated a detailed gap assessment study on food testing infrastructure for exports.

"Although we have undertaken several measures, we are conducting a deeper analysis, both commodity-wise and region-wise. We are identifying gaps in our food-testing infrastructure. We expect the study to be completed within 2-3 months, after which we will develop a comprehensive plan to expand the infrastructure in a more holistic manner," Nitin Kumar Yadav, joint secretary in the Department of Commerce, told reporters.



The EIC is also set to launch an integrated traceability module to streamline and manage processes involved in inspection, testing, and certification for exports. Yadav added that the council is adopting advanced technologies such as IoT-based sampling techniques. New laboratories are being established in Ahmedabad, Faridabad, and Mangalore, he said.

The EIC is also entering into mutual-recognition agreements (MRAs) and memorandums of understanding (MoUs) with various countries for different products, aiming for global recognition of its mechanisms and processes.

This initiative comes as India is negotiating free-trade agreements (FTAs) with the UK and the EU, thereby seeking to improve domestic standards. The export of food items also holds significant potential in markets such as the UAE, which signed an FTA with India in 2022.

“We are striving to establish MRAs for India. We are also studying the requirements of other countries and building capacities to facilitate these agreements,” Yadav stated.

The EIC has significantly increased testing facilities across the country, with the number of accredited laboratories rising to 78 and the number of export establishments approved through the EIC system increasing from 794 to 1,446 over the past decade, according to the ministry.

“Export certificates accepted by importing countries have nearly doubled in a decade, increasing from 61,000 to over 120,000. The laboratory ecosystem has expanded from 21 recognised labs in 2013–14, accredited to ISO 17025 standards, to 78 labs in 2024–25, ensuring timely testing and facilitating exports,” the ministry stated.

EIC certification recognised by major global regulators

Notably, the EIC’s certification system is recognised by major international regulatory bodies, including those of the European Union, the United States, Australia, Turkey, Korea, and Japan, among others. Active participation in organisations such as Codex Alimentarius, ISO, and the WTO has enabled the EIC to advance science-based standards, reduce trade barriers, and promote seamless international trade, the ministry added.

The EIC is also set to launch a user-friendly online portal integrating traceability modules, a Laboratory Information Management System (LIMS), and E-Health features. This portal will streamline and manage end-to-end processes involved in inspection, testing, and certification for exports. Advanced technologies, such as IoT-based sampling techniques, are being adopted, and geographical expansions to locations such as Kakinada, Andhra Pradesh, are underway.

New laboratories are being established in Ahmedabad (Gujarat), Faridabad (Haryana), and Mangalore (Karnataka), while the EIC continues to operate from its headquarters in New Delhi. It maintains a robust operational network of Export Inspection Agencies (EIAs) located in Chennai, Mumbai, Delhi, Kolkata, and Kochi, supported by 24 sub-offices at major ports and export hubs.

EXPERTS ON GM CROP PANELS TO DECLARE CONFLICT OF INTEREST

The Union Ministry of Environment, Forest and Climate Change has amended the rules governing the selection of experts to the Genetic Engineering Appraisal Committee (GEAC), the apex technical body regulating genetically modified (GM) seeds in India.



Under the new rules, an “expert member” ought to disclose their “interest” that could conflict with their duties. The expert is also expected to take all steps necessary to ensure that any conflict of interest does not affect any decision of the GEAC.

An expert member with any direct or indirect association with a matter being discussed in a meeting of the committee is obliged to disclose this prior to the meeting. Unless specifically requested by the committee, the expert is expected to recuse their selves from the meeting. All selected members would also have to fill out a form detailing their professional affiliations to a decade prior to joining the committee.

Split verdict

These rules come on the back of a Supreme Court order in July 2023 requiring that the Centre form a national policy on GM crops.

In that order of July 2023, the SC delivered a split verdict on the validity of the Centre’s 2022 decision granting conditional approval for environmental release of GM mustard crops, thus leaving a final resolution on the release of the crop to a future Bench.

Two judges ruled differently on whether the Centre was right in according approval to GM mustard.

Among the directives that they concurred on was establishing a process for resolving issues around conflict of interest.

As far as the GM case is concerned, the question of such conflict arose following an allegation by an activist group, the Coalition for GM-Free India, in 2013, that one of the members of a Technical Expert Committee appointed by the court, ran an organisation that was funded by Monsanto, a multinational biotech and agricultural pesticides company, and affiliated Indian organisations.

Monsanto has since been bought over by Bayer CropScience Limited, a company with similar interests.

HOW TO TRANQUILISE — AND CAPTURE — A TIGER IN THE WILD

After three weeks on the go and multiple failed attempts at darting, three-year-old ‘runaway’ tigress Zeenat was finally sedated and captured last Sunday from a forest in West Bengal’s Bankura. The tigress was then taken back to Odisha’s Simlipal tiger reserve, where it had been moved from Maharashtra’s Tadoba-Andhari tiger reserve last month.

- Given the magnitude of the challenge, Zeenat’s successful sedation came as a big relief to the joint team of Bengal and Odisha forest departments. Though the art and science of tranquilising have evolved over a century, injecting a drug into a free-ranging wild animal using a remote delivery mechanism remains a delicate task.
- Until the early 20th century when a “code of catching” was developed, commercial animal catchers either chased and lassoed herbivores or used various types of traps and pitfalls.
- In 1896, the British Army adopted what was called Dum-dum bullets, named after the Dum Dum gun factory near Calcutta, where they were first manufactured.



- After the Hague Peace Convention banned Dum-dum bullets in 1899, moral debates on the prevention of pain led to experiments such as ‘narcotic bullets’ (1912) which carried a small dose of morphine to kill ‘painlessly’.
- From there, the seemingly counter-intuitive leap to “shoot animals alive instead of dead” took another decade and a half, when American naturalist Captain Barnett Harris arrived in South Africa in 1928 with “mercy bullets” — a hypodermic needle filled with chemicals at its base.
- It is speculated that Harris’s bullet was covered with curare — a neuromuscular blocker derived from tree bark, and used on blow-dart tips by South American tribes to paralyse and catch animals. In 1929, he used “mercy bullets” to capture one rhino alive but killed two others in the process
- In 1956, the breakthrough that lifted Harris’s rudimentary design to the realm of practicality was the invention of disposable plastic syringes by Colin Murdoch, a New Zealand pharmacist and veterinarian.
- A modern-day tranquiliser gun propels the dart — a ballistic syringe filled with drug and tipped with a hypodermic needle — using compressed CO₂ gas. A tuft of feather as a tailpiece stabilises the dart in flight.
- By the mid-1960s, Murdoch’s dart gun was recognised as the most acceptable and efficient method of capturing wild animals.
- Around that time, British veterinary scientist Dr Antonie Harthoorn and South African conservationist Ian Player developed M99 or etorphine, an opioid stronger than morphine, and still used widely to immobilise elephants and other large mammals.
- Before this invention, wild animals were immobilised using neuromuscular blockers or paralytic drugs. Paralytic drugs have a very low safety threshold and high mortality rate as dosage errors of even 10% can lead to no effect (under-dosing) or death (overdosing).
- Modern alpha-adrenergic tranquilisers, such as Xylazine, are strong sedatives which can be completely reversed with antidotes. By themselves, these drugs can heavily sedate animals, particularly ungulates, but external stimulation can disrupt such spells, risking sudden attacks.
- The combination is doubly useful because, on its own, Ketamine tends to trigger rough inductions and recoveries. However, the increasing misuse of both Xylazine (as Tranq) and Ketamine (as a date-rape drug) has restricted the availability and usage of this very popular combination for wildlife sedation.
- Having a primed dart gun and the right drugs at hand cannot itself ensure a successful sedation. To deliver the remote injection, the target animal has to be traced and tracked to a suitable location.
- The next challenge is to assess the right dose — a factor of the target animal’s weight. Telling the weight of a tiger or an elephant, within a narrow band of error, just by looking at the animal from a distance takes a lot of experience.
- Once sedated, the protocol is fairly simple. The animal’s eyes are covered to reduce stimulants and constant effort, like fanning or applying wet cloths, is made to keep its body temperature under control.



POVERTY, TRAFFICKING IN BENGAL LINKED TO CLIMATE CHANGE: EXPERTS

Despite interventions by the government and efforts by NGOs, trafficking continues to be a major policy challenge in certain parts of West Bengal. With five tropical cyclones battering the State's coastline since May 2020, experts say climate change is one of the factors pushing people into poverty and driving human trafficking.

"Climate change has become a factor behind human trafficking, especially in vulnerable regions such as the Sundarbans. Back-to-back cyclones — Amphan and Yaas — destroyed livelihoods, forcing increased migration, and exposing women, girls, and others to greater risks," said Nihar Ranjan Raptan, founder secretary, Goranbose Gram Bikash Kendra, an NGO working to combat human trafficking.

Mr. Raptan said traffickers exploited socio-environmental vulnerabilities and limited access to essential services. "From our work across districts and parts of the Sundarbans, we see the need to create opportunities and facilitate access to support systems for those in need," he said.

Missing cases

According to the National Crime Records Bureau's latest report, 58,871 people were reported missing from West Bengal in 2022; 53,655 of them were women and 12,455 children. A total of 67 cases of human trafficking were reported with 78 victims in 2022.

Data for the same year show a conviction rate of 55% in human trafficking cases in the State.

Several stakeholders from ILFAT (Integrated Leaders Forum Against Trafficking), one of the biggest federations of trafficking survivors comprising over 2,800 members across seven States, feel that the fight against trafficking should integrate climate change as a factor for effective interventions.

ILFAT released a report on trafficking on July 30, 2024, World Anti-Human Trafficking Day, which points out that the number of human trafficking cases reported in West Bengal in 2020 was 59. This figure increased to 61 in 2021, and 67 in 2022. In 2022, 60 girls and 18 boys below 18 years were trafficked, it stated.

'Lured with jobs'

Ramadhari Sarthi, an ILFAT member, said climate change triggers disasters, forcing vulnerable communities to migrate and lose their livelihoods.

"This exposes impoverished populations to the risk of exploitation by traffickers as many are lured by promises of better wages. Women and children are particularly at risk during migration from villages to cities, where vulnerability to human trafficking increases," Mr. Sarthi said.

Shakila Khatun Katakali, director, Katakali Empowerment Youth Association, said poverty induced by climate change drives human trafficking. "In our collective, Bijoyini, we have 28 female trafficking survivors from Hasnabad and Hingalganj areas of the Sundarbans. A large number of them were pushed into poverty by climate change," she said.

Neha (name changed), an ILFAT member and trafficking survivor, narrated the turn her life took after Cyclone Amphan in May 2020 ravaged her village in the Sundarbans, and she left with a person who promised her employment in other States.



“When I left, I thought I was going to work. Little did I know I was being sold to another person. The cyclone changed everything for me. It destroyed my future,” Ms. Neha said.

She was rescued and now actively works with ILFAT, spreading awareness against trafficking in the Sundarbans.

WHY UTTARAKHAND GOVERNMENT IS PROMOTING THE WINTER CHAR DHAM CIRCUIT

The Uttarakhand government on December 8 inaugurated the winter Char Dham circuit, aimed at drawing tourists to the state in the off-season winter months.

- The Uttarakhand government on December 8 inaugurated the winter Char Dham circuit, aimed at drawing tourists to the state in the off-season winter months.
- Nestled in the Garhwal Himalayas in Uttarakhand, are four revered Hindu shrines or dhams — Gangotri, Yamunotri, Kedarnath, and Badrinath — collectively known as Char Dham.
- Each year, from May to November, lakhs of pilgrims visit these shrines. According to Government of Uttarakhand data, more than 48 lakh pilgrims and 5.4 lakh vehicles visited Char Dham this year, accounting for roughly 8.4 per cent of Uttarakhand’s annual domestic tourist footfall.
- The Char Dham yatra (pilgrimage) thus drives the state’s economy. But during the winter months, heavy snowfall leaves these shrines inaccessible, and their gates are shut.
- During the winter months, the presiding deities of these temples are brought to shrines at lower altitudes — Mukhba in Uttarkashi is the winter seat of Gangotri Dham; Kharsali in Uttarkashi is the winter seat of Yamunotri Dham; Kedarnath’s winter abode is the Omkareshwar Temple in Rudraprayag’s Ukhimath; and Badrinath’s is at Pandukeshwar in Chamoli.
- The winter Char Dham is aimed at drawing pilgrims to these shrines, and thus attract tourist footfall to Uttarakhand during off-season months. As of December 30, the shrines recorded a footfall of 15,314 pilgrims with the Omkareshwar Temple seeing the highest footfall of 6,482 pilgrims followed by Pandukeshwar (5,104 pilgrims), Mukhba (3,114 pilgrims), and Kharsali (614 pilgrims).

Do You Know:

- According to the Uttarakhand tourism department, the Char Dham nets the state more than Rs 200 crore daily. However, the inflow during the winter season is yet to take off, although officials remain hopeful of more footfall as the yatra progresses this year.
- Ravi Chopra, the former chairman of the Supreme Court appointed High Powered Committee on the Char Dham project, said that during winter, rare and threatened animals on the high mountain slopes and crests come down for food and water. “In the final report of the HPC to the SC, we had specifically made a mention that the traffic during winters can cause disturbance for wildlife like snow leopard and mountain sheep as these are shy animals,” Chopra said.
- In July last year, the National Green Tribunal asked the state government to ascertain the carrying capacity of the Char Dham, and the Uttarakhand Pollution Control Board tasked the Wildlife Institute of India with assessing it and submitting a report within a year.



LOTHAL WILL BECOME GLOBAL HUB FOR MARITIME HERITAGE, SAYS UNION PORTS MINISTER

Union Minister of Ports, Shipping and Waterways Sarbananda Sonowal, along with Minister of Labour and Employment and Youth Affairs Mansukh Mandaviya and Gujarat Chief Minister Bhupendra Patel, held a joint review meeting to assess the progress of the National Maritime Heritage Complex (NMHC) here on Saturday.

Under the Sagarmala Programme, the Ministry of Ports, Shipping, and Waterways is developing the NMHC at Lothal in Gujarat. This world-class facility will showcase India's maritime heritage from ancient to modern times, adopting an "edutainment" approach.

Lothal, a prominent city of the ancient Indus Valley Civilisation dating back to 2400 BCE, holds historical significance for its advanced dockyard, thriving trade, and renowned bead-making industry. Artifacts such as seals, tools, and pottery unearthed by archaeologists reveal a rich cultural and economic history, making it a pivotal site of the Harappan civilisation.

Key landmarks

The Ministers toured key project landmarks, including INS Nishank, the Lothal Jetty Walkway, and the Museum Block. They interacted with onsite workers to understand their challenges and progress.

Mr. Sonowal expressed satisfaction with the significant milestones achieved in civil infrastructure development, noting that the project is advancing on schedule. With 65% of Phase 1A already completed, the project is on track to meet its timeline. A key focus of the review was the integration of local communities into the project's development. Mr. Sonowal said: "NMHC project will boost tourism, provide a platform for maritime education, and foster collaboration between India's maritime community and the global industry."

He further said, "This project will create employment, foster skill development, and empower the youth of Gujarat."

The NMHC is poised to become a cornerstone of India's maritime legacy, harmonising cultural and historical significance with economic and educational development.

THE STORY OF BINODINI DASI, AFTER WHOM STAR THEATRE IN KOLKATA HAS NOW BEEN NAMED

West Bengal Chief Minister Mamata Banerjee on Tuesday (December 31) announced that Kolkata's Star Theatre, a cultural institution of the city, would be renamed Binodini Mancha or Binodini theatre. Many have hailed this as the "correction of a 141-year-old wrong" committed against Binodini Dasi, or Nati (performer) Binodini, as she was known.

- Born in 1863, Binodini was one of the first few women to join theatre in Bengal as professional actors. She found great success, but had to contend with the stigma of her birth in a red light district and of being a woman who performed publicly.
- When the Star Theatre was being built, Gurumukh Roy, a young businessman, had promised to fund it if Binodini agreed to be his mistress. She was persuaded to do so, with the promise that the theatre would be named B. Theatre in her honour. But when the theatre was finally ready in 1883



(at a different location from where it stands now), it was named Star Theatre. Many believe it was this betrayal that caused Binodini to quit acting, at the height of her popularity.

- However, after stepping off the stage, Binodini took greater control over her own story. In 1913, her autobiography, *Amar Katha*, was published, in which she wrote in detail about the challenges caste, class, and patriarchy threw her way.

Do You Know:

- Binodini was born into a poor family in a Kolkata suburb inhabited by sex workers. Struggle for money was so acute in the family that her five-year-old brother was married off and the dowry used to buy food. The family also took in lodgers, one of whom was the tawaif Ganga Bai. Ganga Bai taught the child Binodini to sing, and also introduced her to the theatre.
- Binodini played her first part when she was 12. Her talent was noticed by Girish Ghosh, one of the best writers/managers of the theatre scene in Bengal, and soon, she became a successful actor.
- Author Rimli Bhattacharya, in her paper 'Public Women': Early Actresses of the Bengali Stage — Role and Reality' (India International Centre Quarterly, Vol. 17, The Calcutta Psyche (Winter 1990/1991)), noted that theatre actresses in the late 19th century were in the unique position of being 'public women' actually performing in public, as opposed to "respectable women" confined to their homes, and walled-off sex workers who were visited in secret.
- After quitting the theatre, Binodini became the second wife of a wealthy man. However, her hurts still smarted, and in 1913, she decided to write her story. In the preface, she says she had chosen to put pen to paper as there was no one she could confide in, no kin or companion to share her pain with, because "the world sees me as a sinner — a fallen woman." This autobiography became important for her story, but also as a historical record of a shadowy world.

SHORT NEWS

'BIDEN TO BAN NEW OIL DRILLING OVER VAST AREAS OF US ATLANTIC, PACIFIC WATERS'

US President Joe Biden is set to ban new offshore oil and gas development across 625 million acres (250 million hectares) of U.S. coastal territory, Bloomberg News reported on Friday.

The ban, to be announced on Monday, rules out the sale of drilling rights in stretches of the Atlantic and Pacific oceans and the eastern Gulf of Mexico, said the report, citing unidentified people familiar with the matter.

PMFBY AND RWBCIS

— The Union Cabinet on January 1, 2025, approved the continuation of two crop insurance schemes — the Pradhan Mantri Fasal Bima Yojana (PMFBY) and Restructured Weather-Based Crop Insurance Scheme (RWBCIS) until 2025-26.

— PMFBY was launched in 2016 to replace the existing National Agricultural Insurance Scheme (NAIS) and the Modified National Agricultural Insurance Scheme (MNAIS). The scheme was initially compulsory for loanee farmers; in February 2020, the Centre revised it to make it optional for all farmers.

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



— Under the PMFBY, a farmer is required to pay as a premium 2% of the sum insured or actuarial rate, whichever is less, for all kharif foodgrain and oilseed crops; 1.5% of sum insured or actuarial rate, whichever is less, for all rabi foodgrain and oilseed crops; and 5% for horticultural crops.

— While PMFBY is based on yield, RWBCIS is based on proxies. Farmers are provided insurance protection against adverse weather conditions such as excess rainfall, wind, and temperature. The number of insured farmers under RWBCIS is relatively low.

FIAT

— The government approved the creation of the Fund for Innovation and Technology (FIAT) with a corpus of Rs.824.77 crore.

— The FIAT would be used towards funding technological initiatives under schemes such as Yield Estimation System using Technology (YES-TECH), Weather Information and Network Data Systems (WINDS), etc, as well as research and development studies.

— YES-TECH uses Remote Sensing Technology for yield estimation with a minimum 30 per cent weightage to technology-based yield estimates. Nine states — Andhra Pradesh, Assam, Haryana, Uttar Pradesh, Madhya Pradesh, Maharashtra, Odisha, Tamil Nadu, and Karnataka — are implementing it.

— WINDS, the statement said, envisages setting up Automatic Weather Stations (AWS) at the block level and Automatic Rain Gauges (ARGs) at the Panchayat level. “Under WINDS, a 5 times increase in current network density is envisaged to develop hyper-local weather data. Under the initiative, only data rental costs are payable by Central and State Governments,” it said.

HOW TRANS PERSONS CAN CHANGE NAME, GENDER IDENTITY IN OFFICIAL DOCUMENTS

Five years after the Transgender Persons (Protection of Rights) Act, 2019 came into force, the Karnataka High Court has stepped in to allow a transgender woman to change the name and gender on her birth certificate. She was denied this previously, even though it is explicitly permitted under the 2019 Act and subsequent rules.

AFTER 2 YEARS OF INDIA-AUSTRALIA TRADE DEAL, EXPORT UTILISATION REACHES 79%

The Ministry of Commerce and Industry on Sunday said that export utilisation under the India-Australia Economic Cooperation and Trade Agreement (ECTA) has reached 79 per cent after two years of implementation, while import utilisation stood at 84 per cent.

Trade utilisation of a free trade agreement (FTA) indicates the extent to which trade benefits from the agreement. It also provides insights into whether businesses are effectively leveraging the FTA or finding its concession procedures burdensome. However, trade between India and Australia has declined during the current financial year.

SHIFTING SPENDING TRENDS: SUGAR AND SALT DECLINE; BEVERAGES, PROCESSED FOOD RISE

In an indication of the impact of rising food prices, the share of spending on food items in the consumption basket of rural and urban households went up in 2023-24, even as non-food items



constituted the majority chunk of the spending. Fact sheet of the latest round of the Household Consumption Expenditure Survey 2023-24 released by the Ministry of Statistics and Programme Implementation (MoSPI) on Friday also showed rural spending growing at a faster pace than urban areas, narrowing the gap between the two, and also perhaps signalling a cut in consumption by urban households.

2024 WAS INDIA'S WARMEST YEAR

According to the India Meteorological Department, India experienced its warmest year since 1901, beating the previous temperature record of 2016.

— The annual mean land surface temperature averaged over the country was up by 0.65 degrees Celsius, making 2024 the warmest in 123 years. Globally also, the year gone by was racing to become the warmest ever, but the official announcement in this regard is awaited.

— IMD's temperature data (long period average based on 1991 – 2020) suggested that the top five warmest years have been : 2016 (0.54 degrees Celsius), 2009 (0.40 degrees Celsius), 2010 (0.39 degrees Celsius) and 2017 (0.38 degrees Celsius).

NEUTRINOS

— Scientists have deployed telescopes under the Mediterranean Sea to detect the high-energy neutrinos also known as ghost particles. The two telescopes are part of the Cubic Kilometre Neutrino Telescope or KM3NeT.

— These telescopes are much like the IceCube Neutrino Observatory, which can detect high-energy neutrinos from deep space but is under the frozen ice in the Antarctic rather than being in the water

— Neutrinos are tiny particles, very similar to electrons, but without any electric charge. They are miniscule subatomic particles that hardly interact with anything.

— They were first detected in 1959, though their existence was predicted almost three decades earlier, in 1931.

KM3NeT is a deep-sea research infrastructure in the Mediterranean Sea, comprising a neutrino telescope with a volume of at least one cubic kilometre. It uses Cherenkov radiation to study neutrinos.

NOROVIRUS

— The stomach infection norovirus is causing alarm in the United States. In India, norovirus has previously affected people in Kerala, although on a much smaller scale compared to the numbers in the US.

— Norovirus is a highly contagious virus that is also sometimes referred to as the 'winter vomiting bug'. It can be transmitted through contaminated food, water, and surfaces. The primary route is oral-faecal.



— It is similar to diarrhoea-inducing rotavirus and infects people across age groups. Disease outbreaks typically occur aboard cruise ships, in nursing homes, dormitories, and other closed spaces.

DPIIT CONSTITUTED COMMITTEE DEREGISTERS PATENT AGENT OVER ALLEGED MISCONDUCT

In a first such instance, a patent agent has been removed from the Register of Patent Agents for “alleged professional misconduct” by a five-member ad-hoc committee formed by Department for Promotion of Industry and Internal Trade (DPIIT) at the direction of the Delhi High Court to look into “complaints of misconduct against various patent and trademark agents”, an order dated January 1 showed.

Patent agent Naveen Chaklan was deregistered after the ad-hoc committee led by the Controller General of Patents, Designs and Trade Marks (CGPDTM) Unnat P Pandit found him guilty of misconduct in his professional capacity which exposed his client and patent applicant Saurav Chaudhary to “harassment, mental agony, financial hardships” and loss of rights in the application.

K S MANILAL

— Renowned taxonomist K S Manilal, who was conferred with Padma Shri, died in Kerala’s Thrissur after a prolonged illness. He was 86.

— Among his contributions to botanical research, Kattungal Subramaniam Manilal is best known for research, annotation and translation of the botanical treatise in Latin, Hortus Malabaricus, which is the oldest comprehensive printed book on the natural plant wealth of Asia and medicinal properties of the flora in the Western coast of India, particularly Kerala, Karnataka and Goa.

— He was the founder of the Indian Association for Angiosperm Taxonomy and was also honoured by the Netherlands with the ‘Officer in the Order of Orange-Nassu Award’, one of the highest civilian awards given by the country.

DR R CHIDAMBARAM

— A former chairman of the Atomic Energy Commission and a former Principal Scientific Advisor, Chidambaram passed away at the age of 88.

— The idea to explode a thermonuclear device — the hydrogen bomb — during the 1998 tests could be largely attributed to him.

TAKANAKUY FESTIVAL

— This unique annual celebration called Takanakuy takes place in the town of Chumbivilcas province near Cuzco in Peru on December 25, every year.

— The ancient tradition was inherited from the pre-Hispanic Chanka culture. It said this tradition serves as a way for community members to resolve conflicts and start the new year with a clean slate.



— The bouts are typically supervised by local authorities or community elders to ensure they remain controlled and respectful. After the fights, a crucial component of the festival is the collective drinking, symbolizing reconciliation and unity.

TAMU LOSHAR

- Gurung community in Nepal marks its new year by celebrating Tamu Loshar.
- In the Gurung language, 'Lho' means year or age and 'Sar' denotes change. Members of the Gurung community mark the festival by organizing feasts and cultural programs.

18TH PRAVASI BHARATIYA DIVAS

- Trinidad and Tobago President Christine Carla Kangaloo will be the chief guest at the 18th Pravasi Bharatiya Divas (PBD) programme to be held in Bhubaneswar from January 8 to 10.
 - President Kangaloo is a descendent of Indian indentured workers who went to the Caribbean islands in late 1800s.
- January 9 was selected as the date when Mahatma Gandhi returned to India from South Africa in 1915.

WORLD BLITZ CHAMPIONSHIP

- R Vaishali won the bronze medal at the World Blitz Championship after reaching the semi-finals at the year-end event at New York's Wall Street.
- Ju Wenjun clinched the women's blitz crown by defeating Lei Tingjie in the final. Vaishali had lost to Wenjun in the semis and finished behind the two Chinese women.
- In the men's section, Magnus Carlsen and Ian Nepomniachtchi agreed to share the title after both players won two games each in the final and three tie-break games were drawn.

KONERU HUMPY

- Humpy was crowned FIDE Women's World Rapid Champion, clinching her second title in this tournament.
- The 37-year-old from Vijayawada won the women's World rapid championship after defeating Indonesia's Irene Sukandar in the final round. This is the second World rapid title for Humpy, which she won first in 2019.

NATIONAL SPORTS AWARDS 2024

- Major Dhyana Chand Khel Ratna Award is given for the spectacular and most outstanding performance in the field of sports by a sportsperson over the period of the previous four years.
- Arjuna Award for outstanding performance in Sports and Games' is given for good performance over a period of the previous four years and for showing qualities of leadership, sportsmanship and a sense of discipline.



— Praveen Kumar, D Gukesh, Manu Bhaker and Harmanpreet Singh will be honoured with the Major Dhyan Chand Khel Ratna Award. The ministry also announced 32 Arjuna Awardees.

— The Khel Ratna winners receive a cash prize of Rs 25 lakh along with a citation and a medallion. The Arjuna awardees are given Rs 15 lakh as cash reward, a statuette of Arjuna and a citation. The award ceremony will be held in New Delhi on January 17.

GENERATION BETA

It refers to the group of children born between the years 2025 and 2039. It is said that children in this generation will be faster than those in Generation Z (Gen Z) and Generation Alpha.



DreamIAS

**BUSINESS & ECONOMICS****HOW MANMOHAN SINGH CREATED THE MIDDLE CLASS – AND DIDN'T THINK WELFARE WAS GOVERNMENT LARGESSE**

Alone in the post-independence history of India, Manmohan Singh rose to the highest office of the land based on his policy accomplishments, not because of a mass political base. He altered India's economic future in 1991. Though his contributions are manifold, as I discuss later in this column, the fundamental transformation in the direction of economic policy is his truly monumental legacy.

Let us recall the circumstances of the first half of 1991. The balance of payments had lurched from one crisis to another, and in mid-July, India had so little foreign exchange left that only two weeks of imports could be financed. Put simply, India was on the verge of bankruptcy.

Earlier, a macroeconomic crisis of this kind typically required a short-run economic stabilisation plan under an IMF-led stand-by arrangement. The aim used to be getting at least two macroeconomic balances – the external balance of payments and internal fiscal deficit – in control. To India's great fortune, Manmohan Singh, as the nation's finance minister in 1991, saw the crisis as an opportunity to attend to the long-term economic issues, not viewing it only as a short-run problem, which, of course, it also was. In a historic speech given to Lok Sabha on July 24, 1991, he argued that "macroeconomic stabilisation and fiscal adjustment alone cannot suffice. They must be supported by essential reforms in economic policy... (facilitating) a transition from a regime of quantitative restrictions to a price-based mechanism."

The argument, in other words, was that India's economic policy, based as it was on state-directed quantitative planning since Independence, required a market-based reformulation. Otherwise, such macroeconomic crises would continue to erupt, and economic progress would be stalled. There had to be a movement towards economic freedom and state retraction from the economy.

Internally, this led to what Jagdish Bhagwati called "a bonfire of investment licences". Instead of the state telling investors where to invest, how much and with what kind of technology, domestic entrepreneurs were now free to invest in most sectors of the economy. Externally, trade pessimism, typical of the earlier era, was to be abandoned, and a market-oriented trade regime was embraced, supplemented with openness to foreign investment. "We have reached a stage of development", argued Manmohan Singh in the justly famous July 1991 Lok Sabha speech, "where we should welcome, rather than fear, foreign investment. Concern is sometimes expressed that... foreign investment may jeopardise our economic sovereignty. These fears are misplaced. We must not remain permanent captives of a fear of the East India Company as if nothing has changed in the past 300 years."

Thus began India's economic transformation that, unreversed by later governments, has lasted till today. In 1980, India was the 50th largest economy in the world. By the time Singh left office in 2014, the Indian economy was among the top 10 in GDP (and has become the fifth-largest by now). A large middle class has come into being, literally for the first time in modern Indian history. India always had some very rich people and a large mass of the poor, but the middle class was minuscule. Not so any more.

Finally, given the World Bank's poverty line (\$1.90 a day at 2011 prices), nearly 250-300 million people have been lifted out of poverty since 1991. This poverty-alleviation record is substantial



but not as phenomenal as China's, where over 700 million have ceased to be poor in the post-Mao era.

Indeed, the inability of markets to not lift more people out of poverty led Manmohan Singh to institute a new set of policy innovations in his second coming – when he became India's Prime Minister (2004-14). In this phase, the makings of a modern welfare state were put in place, with a focus on the poor and the marginalised. In 2005, rural India got a right to employment for 100 days a year via the world's largest employment guarantee program (MNREGA). In 2009, a right to education was created, and in 2013, a right to food security. All of this was undergirded by a right to information (2005), which citizens could exercise to find out how serious the government's rights delivery was.

It is important to emphasise that this was a rights-based welfare regime. All programmes for the subaltern were legislated as the rights of the less privileged. Using modern social science terminology, it can be argued that many governments in India, including the present one, conceptualise welfare as acts of government kindness or what social scientists call patrimonialism. The idea of 800 million citizens covered with ration is an example. Rights-based welfare is not simply embodied in government schemes. It is anchored in legislation and laws, which then spawn schemes (yojnayein). These are two very different concepts. Manmohan Singh's welfarism viewed the underprivileged as rights-bearing citizens, not simply as recipients of largesse.

Beyond economics and welfare, the civil nuclear deal with the US was a massive achievement of Manmohan Singh as India's Prime Minister. The deal ended what used to be called the nuclear apartheid and took the US-India relationship to a new level. The tensions that used to mark the US-India relationship during the Cold War had lost their rationale as the Cold War ended. Still, a systematic diplomatic effort had to be made to turn the post-Cold War phase into a set of policies and programmes. Both for geopolitical and economic reasons, a close relationship with the US is beneficial for India. Manmohan Singh saw the desirability of it and managed to institute a new phase in the Indo-US relationship. India's diaspora was, in any case, heavily inclined towards the US. Even during the Cold War, there was no great citizen enthusiasm for the Soviet Union. Government policy finally gravitated closer to citizen wishes.

A word may also be said about Manmohan Singh's personal conduct — before, during and after his years in power. Unwavering civility would perhaps be the best way to describe him. Even when in positions of high power, arrogance never touched him, and civility never failed.

LOSING MOMENTUM

Several economic indicators released over the past week are bad news for the Finance Ministry and Reserve Bank of India's hopes of a growth rebound in the second half of 2024-25 — at least for the October-December quarter. While GDP growth slipping to 5.4% in the second quarter was termed a transient blip, policymakers have acknowledged slowing consumption demand led by restrained spending trends in urban India. They have also exuded optimism about a festive boost from cities along with a resilient rural demand outlook lifting the momentum. The latest data points are also important as they are part of the final gauges for the Finance Ministry to assess before it finalises its economic blueprint for 2025-26 in the February 1 Union Budget. Bank credit growth has slowed for the fifth straight month in November, while core infrastructure sectors — about 40% of industrial output — expanded at a four-month high pace of 4.3%. However, production levels were 3.3% below October with six of eight sectors operating at lower capacities.

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



The Purchasing Managers' Index shows factory activity levels through November and December were the worst through 2024, even as input cost inflation spurred price hikes that would hit demand somewhat over time.

The Goods and Services Tax (GST) receipts for December, based on transactions concluded in November, do not have much succour to offer either, especially on the consumption engine of the economy. Gross revenues were at a three-month low of almost ₹1.77 lakh crore, and just 7.3% higher than last year, marking the joint-second slowest uptick in three and a half years. December's revenues, in fact, mark the fourth straight month of below-10% growth, with the pace decelerating every passing month, and the year-to-date rise in revenues is now just 8.6%, making the 11% growth estimate in the Budget a tall task to catch up with in the final quarter. Net revenues after refunds were just 3.3%, the slowest this fiscal, although this may partly be explained by high refund payouts in December. Revenue growth from domestic transactions slowed to 8.4%, while import revenues grew just 3.9% — the former may perhaps be linked to tighter retail credit flows and a post-Deepavali spending pullback, but the latter is a tad puzzling as November's goods import bill had shot up 27% to a record high of \$70 billion. The poor revenue growth rates for major consumer States such as Uttar Pradesh (1%) and Gujarat (4%), and the persistent contraction in Andhra Pradesh and a few northeastern States (including Manipur), also need closer scrutiny. For the Budget's formulation, the Centre would do well to try to understand and address the pain points afflicting consumption, including high inflation.

UPI DUOPOLY'S RISE AND MARKET VULNERABILITIES

The rise of Unified Payments Interface (UPI) in the eight years since its launch has been meteoric, with the UPI ecosystem now accounting for nearly eight in every 10 digital transactions in India, with a value of over ₹20.60 lakh crore in August of this year alone.

This success, however, is no small feat for a country like India, which is characterised by low digital literacy and a historic reliance on cash, and is deeply reflective of the critical role UPI has played in fostering public trust in digital payments.

UPI's continued success will heavily depend on whether its ecosystem can maintain and build upon such public trust, which will, in turn, depend on the ecosystem's performance on metrics such as resilience, reliability, and openness to innovation. This is particularly important as UPI's penetration remains at 30% of the population, which is impressive for a new payments technology, but shows how much of India remains to be brought into the digital payments fold. Achieving this will require substantially new innovations in everything from service offerings to app design and the overall product base of the UPI ecosystem to make it relevant for the remaining 70% of the country.

A major hindrance is the extreme market concentration of two Third Party App Providers (TPAPs) in the UPI network — Phone Pe and Google Pay. Together, they control over 85% of the total market share, whereas the next biggest player, Paytm, controls merely 7.2%.

Major risks

The emergence of a duopoly, especially a foreign-owned one, at a relatively early stage in the UPI ecosystem creates three major risks. The first is the increased systemic vulnerability. High market concentration in the payments space can lead to single points of failure, where any sudden stoppage or break in services can have ripple effects across the entire financial structure. Given



that nearly eight out of 10 transactions carried out via UPI in a month take place on either PhonePe or GooglePay, these two apps have effectively become such single points of failure. For a system as critical as UPI to remain robust, it is essential to develop failsafes and backup mechanisms to ensure the system continues to function smoothly.

Second, there is the risk of decreased competition and innovation in the payments and financial ecosystem. By consolidating a disproportionately large share of the market and user base, the two dominant TPAPs benefit from a scale that creates high barriers to entry for smaller and newer market participants. Given that all service providers in the UPI network are subject to a zero-charge framework for users, they primarily compete to achieve user scale, which they then leverage for commercial purposes by cross-selling other financial products.

The widespread scale of operations and user base that the two foreign-owned TPAPs have consolidated creates an inherently uncompetitive market. The lack of competition also disincentivises investment in new innovations, as the existing dominant players need not do anything more to maintain their current positions.

Third is the risk of foreign dominance. Both TPAPs in the duopoly are foreign-owned — PhonePe by Walmart and GPay by Google. No Indian TPAP or service provider can realistically hope to compete against the dominant TPAPs without billions of dollars in funding. Further, this foreign ownership creates multiple potentially new lines of failure, including data protection and backdoor access to sensitive information of Indian citizens, many of which Indian regulators might not even be aware of. It is therefore prudent policy to encourage the development of Indian TPAPs, which can strengthen the UPI ecosystem by providing a counterbalance to the current dominant platforms. This is not an argument against having foreign-owned UPI players or service providers, but rather a call to create a more level playing field for Indian apps and developers.

While the existing duopoly has been repeatedly flagged for its associated risks by regulators and parliamentarians alike, it remains to be substantially addressed. In 2020, the National Payments Corporation of India (NPCI) issued a circular instructing all TPAPs to cap their market share at 30% of the total volume of transactions processed via UPI during the previous quarter and imposed an upper limit of two years for implementation. However, the NPCI subsequently extended this deadline. Four years later, the two TPAPs in question are no worse for the wear, with PhonePe alone accounting for 48.36% and Google Pay for 37.3% of market share in volume, as of August 2024. It is now being reported that such delays could continue beyond this year.

To further add to the troubles of Indian developers, recent reports suggest that the NPCI may potentially increase the market share cap from 30% to 40%. However, every subsequent extension given by the NPCI, with any potential increase in the market share cap, will only allow the dominant TPAPs to consolidate their hold.

Under the right conditions and with the right incentives, however, the UPI ecosystem has every potential to offer smaller market participants a level playing field where they can innovate and compete with larger established players. As UPI enters its next phase of growth in both reach and innovation, the implementation of a market cap is a key step in insulating the ecosystem from such risks that stand to substantially erode public trust and derail UPI's success and future transformational capabilities.



WHATSAPP PAY CAN NOW EXTEND UPI SERVICES TO ALL USERS IN INDIA

National Payments Corporation of India (NPCI) has lifted the limit from on-boarding UPI users for the third-party app provider WhatsApp Pay with immediate effect. With this development, WhatsApp Pay can now extend UPI services to its entire user base in India, NPCI said in a statement. Previously, NPCI had permitted WhatsApp Pay to expand its UPI user base in a phased manner, it added. There was a cap of 100 million users which has been lifted by NPCI. With this notification, it said, NPCI is removing the limit restrictions on user on-boarding on WhatsApp Pay. WhatsApp Pay will continue to comply with all existing UPI guidelines and circulars applicable to existing Third-Party Application Providers (TPAPs), it said. NPCI, an initiative of the Reserve Bank of India (RBI) and the Indian Banks' Association, is an umbrella organisation for operating retail payments and settlement systems in India (IBA). NPCI governs the Unified Payments Interface (UPI) framework in India.

EXPRESS VIEW ON INDIAN BANKING SYSTEM: IN GOOD HEALTH

The Indian banking system continues to record improvement across several parameters. As per the RBI's latest Financial Stability Report, bad loans of banks have fallen to a 12-year low of 2.6 per cent in September 2024. This improvement in asset quality is being observed across all sectors. Banks have also reported a healthy increase in their profitability. Their provision coverage ratios are high and their capital position is healthy. The stress tests carried out by the RBI also suggest that even if the macroeconomic environment takes a turn for the worse, banks would remain well capitalised, with only four banks falling short of the minimum capital requirement in one adverse scenario.

There are, however, areas of concern. Particularly troubling are the signs of stress in the unsecured retail loan book with the data showing a steep increase in write-offs in this segment. As per the central bank, this "could be partly masking worsening asset quality in this segment and dilution in underwriting standards." More than half of the new bad loans in the retail segment have, in fact, come from "slippages in the unsecured loan book." Signs of stress are also evident in the micro-finance sector which tends to cater to low income households. The share of stressed loans has increased and "impairment remained high" among borrowers with multiple loans. Equally worrying is that the share of borrowers who have taken loans from four or more lenders has increased, indicating growing indebtedness in this segment. Within consumer credit, the report also finds that of the borrowers with a personal loan of under Rs 50,000, 11 per cent were overdue, while 60 per cent "had availed more than three loans" in the ongoing financial year — further pointing towards growing household leverage and stress in repayment. There are other indications of this as well. As per a report in this paper, gold loan NPAs surged by 30 per cent to Rs 6,696 crore as of June 2024, from Rs 5,149 three months before.

Large borrowers appear to be faring better. Over the last few years, bad loans among the banks' large borrowers have steadily declined — from 4.5 per cent in March 2023 to 2.4 per cent in September 2024. However, loans where the principal or interest payment is overdue between 31 and 90 days rose sequentially in the September quarter. At the end of September 2024, the unhedged external commercial borrowings stood at \$65.48 billion. These areas of possible vulnerabilities and pockets of stress warrant close monitoring.



HIGH CREDIT CARD INTEREST IS NOT 'UNFAIR TRADE PRACTICE', HERE'S WHY

If you have a credit card or are considering getting one, a recent Supreme Court ruling has given you another reason to think twice before defaulting on a payment. A Bench of Justices Bela M Trivedi and Satish Chandra Sharma last week held that the interest rate charged by banks could not be challenged as an “unfair trade practice”.

- In doing so, the SC overruled a 2008 decision by the National Consumer Disputes Redressal Commission (NCDRC) which held that banks could not charge interest above 30% per annum. The SC also held that the Reserve Bank of India (RBI) is the only authority that can impose limits on interest rates.
- In the case of “Awaz” Punita Society & Ors v. Reserve Bank of India & Ors (2007), the petitioners had filed a complaint stating that certain banks were levying “usurious” (excessive) rates of interest — in the range of 36-49% per annum — for delays or defaults on credit card payments.
- This, they claimed, amounted to an unfair trade practice under the Consumer Protection Act, 1986 (CPA). (The old CPA was repealed and replaced by the new CPA in 2019). They also claimed that the RBI was required to issue a circular restricting banks from charging interest above a specific rate.
- The RBI, however, argued that although it had already directed banks not to charge excessive rates of interest, its policy was to leave it to the banks to determine the specific rates of interest without directly regulating the subject.
- Section 21A states that, “a transaction between a banking company and its debtor shall not be re-opened by any Court on the ground that the rate of interest charged by the banking company in respect of such transaction is excessive”. Further, they also cited Section 35A which gives the RBI the power to give binding directions to banking companies in certain circumstances.

Do You Know:

- The Commission held that banks could be ordered to discontinue an “unfair trade practice” as this term has been defined widely under the CPA to include the use of deceptive or unfair practices “for the purpose of promoting the sale, use or supply of any goods or for the provision of any service”. This, the NCDRC held, could cover the activities of banking companies.
- Comparing interest rates with several countries including the US, UK, Australia, and the Philippines, the Commission concluded that 36-49% interest rates were indeed excessive.
- It also referred to the Supreme Court’s decision in Central Bank Of India vs Ravindra And Ors (2001) which stated “The power conferred by Sections 21 and 35A of the Banking Regulation Act, 1949 is coupled with duty to act (by issuing directives)” and that “Any interest charged and/or capitalised in violation of RBI directives...shall be disallowed and/or excluded from capital sum and be treated only as interest and dealt with accordingly”.
- With this in mind, the NCDRC held that “there is no justifiable ground for not controlling the banks which exploit the borrowers by charging exorbitant rates of interest varying from 36 per cent to 49 per cent per annum, in case of default by the credit card holders to pay amount before the due date”.



- The court then set a 30% per annum cap on the maximum interest rate that banks could charge. On appeal, this decision was stayed by the SC in 2009.

30% JUMP IN GOLD LOAN NPAS IN APRIL-JUNE ON SLOWING ECONOMY, DEBTS

In what seems to be a disturbing trend, there has been a significant rise in defaults among customers who have pledged gold to secure loans.

- Gold loan non-performing assets (NPAs) — or loans defaulted by borrowers — of banks and non-banking finance companies (NBFCs) had risen 30 per cent to Rs 6,696 crore as of June 2024, from Rs 5,149 crore just three months ago, according to data provided by the Reserve Bank of India (RBI).
- The surge in gold loan defaults is attributed to the rising indebtedness as a slowing economy has affected income levels, making it difficult for borrowers to repay.
- When gold prices went up, people pledged their gold to meet household expenses, school and education fees, and hospital charges. They defaulted on the loans as they found the loan amount is greater than the purchase price and were oblivious of the fact that their credit score will come down after the default.
- The RBI has taken note of the irregular practices in the gold loan sector and has directed lenders to review their policies and practices. The central bank has also identified weaknesses in monitoring loan-to-value ratios, incorrect application of risk weights, and lack of transparency during auctions of gold ornaments and jewellery.
- The growing concern of gold loan defaults highlights the need for lenders to strengthen their credit assessment and verification processes, enhance financial literacy programs for borrowers, and implement more flexible repayment options.

HOUSEHOLDS' BALANCE SHEET STRESS IS ALSO K-SHAPED, RECKONS NOMURA

With the Reserve Bank of India's (RBI) latest Financial Stability Report taking cognisance of increasing stress levels in retail loans, especially among unsecured creditors, Nomura economists remarked household stress in India has also turned K-shaped, with the rise in retail debt driven by consumption loans while asset-creating loans have a shrinking share.

Current household debt has risen to about 43% of GDP from a tad over 35% of GDP in March 2020, Nomura economists Sonal Varma and Aurodeep Nandi said in a note, adding RBI flagged the rising household balance sheet stress.

"Subprime borrowers are primarily taking on consumption loans, while those better off are taking on leverage to buy assets, which suggests a K-shaped credit market.

"Approximately 60% of those taking on personal loans had more than three live loans. That said, the RBI's macroprudential tightening has led to a decline in retail credit growth," they pointed out.

Nomura has reiterated that India is in the midst of a cyclical slowdown, and this "evidence of household balance sheet stress chimes with weak income and K-shaped" urban consumption demand. We expect GDP growth to remain weak at 6% year-on-year in 2024-25 and 5.9% in 2025-26," they concluded.



WHAT SPENDING SURVEYS SHOW — AND WHAT THEY DON'T

Last week, the government released the results of the household consumption expenditure carried out during August 2023 to July 2024. This large scale survey — information has been collected from 2.61 lakh households — follows a similar survey that was carried out the year before. While in the past, large scale consumption expenditure surveys have typically been carried out once every five years, the rationale for conducting two back-to-back surveys was to check the robustness of the results and the methodology used in the 2022-23 survey.

As per the latest survey, in rural areas, the average monthly per capita consumption expenditure rose to Rs 4,122 in 2023-24, up from Rs 3,773 in 2022-23. For urban areas, the comparable numbers are Rs 6,996 and Rs 6,459. Adjusting for inflation, consumption has grown at around 3.5 per cent during this period. Data from the survey does show a marginal increase in the share of spending allocated towards food. The percentage share of food in average monthly expenditure, which had fallen from 52.9 per cent in 2011-12 to 46.38 per cent in 2022-23 in rural areas, and from 42.62 per cent to 39.17 per cent in urban areas, edged up slightly to 47.04 per cent and 39.68 per cent in 2023-24 respectively. This could be partly because of high food inflation during this period. Some experts are also reported to have said that such differences are within the margin of error. The latest survey data also shows that the rural-urban gap continues to fall with spending in rural areas growing at a relatively faster pace. The difference in average monthly consumption expenditure between rural and urban areas has fallen from 83.9 per cent in 2011-12 to 71.2 per cent in 2022-23 and further to 69.7 per cent in 2023-24. However, as per a report in this paper, in the five years ending in 2023-24, nominal rural wages grew at 5.2 per cent, while real wage growth was -0.4 per cent. The trend of subdued rural wages has continued in the ongoing year as well. The survey results also reveal a decline in consumption inequality. The Gini coefficient has fallen from 0.283 in 2011-12 to 0.266 in 2022-23 and further to 0.237 in 2023-24 in rural areas, and from 0.363 in 2011-12 to 0.314 in 2022-23 and to 0.284 in 2023-24 in urban areas. The disaggregated data shows that in 2023-24, consumption of the top 5 per cent in rural and urban areas was actually lower than in 2022-23. In comparison, other data points towards greater spending by those at the top end of the distribution. There is also the issue of how much of total household spending is captured by these surveys when compared to consumption expenditure estimates from the national accounts.

Household consumption expenditure surveys do not just provide information on the changes in spending patterns, but are also used for estimating poverty and for constructing economic indicators such as the consumer price index. Considering the dramatic shifts in the household consumption basket since the survey in 2011-12 — for instance, the fall in the share of food, especially cereals — these surveys will have wide ranging implications.

GOVERNMENT CONSTITUTES PANEL TO REJIG THE WHOLESALE PRICE INDEX

The Centre on Thursday announced the formation of an expert panel to revise the constituents of the country's Wholesale Price Index (WPI) in light of the structural changes in the economy that have occurred between 2011-12, the current base year for the critical price gauge, and 2022-23 that would be the new base year.

The working group, to be steered by NITI Aayog member Ramesh Chand, would also examine the composition of, and the methodology for compilation of a new Producers' Price Index or PPI, approved by a technical advisory panel on Statistics of Prices and Cost of Living.



For the PPI, the panel has been asked to suggest further improvements in the compilation and presentation formats that are under consideration, and, more importantly, recommend a roadmap for India to switch over from using WPI to the PPI. At a broader level, it may also suggest any other improvements for enhancing the reliability of the two indices.

The group has been asked to submit its final report to the Office of the Economic Adviser in the Commerce and Industry Ministry within 18 months, effectively giving it a June 30, 2026 deadline.

As per the terms of reference of the 18-member panel that also includes some private sector economists, the group is expected to review price collection system and suggest changes for improvement and decide on WPI and PPI computation methodology.

“The Chairman of the Working Group may co-opt experts/ representatives of other agencies, as may be considered necessary,” the Ministry said. Apart from Mr. Chand, the panel includes eight officials from the Ministries of Statistics, Finance, Petroleum and Natural Gas, Agriculture, and Consumer Affairs. A RBI representative and the CEO of the GST Network have also been roped in.

From the private sector, Crisil chief economist Dharmakirti Joshi, Bank of America Merrill Lynch economist Indranil Sengupta, and Kotak Mahindra Asset Management MD Nilesh Shah have been named as members of the working group. PM’s EAC member Shamika Ravi and economist Surjit Bhalla are the non-official members.

WORLD STARTS WAKING UP TO INDIAN COFFEE, EXPORTS CROSS \$1 BN FIRST TIME

Traditionally a tea exporter, India is making significant inroads into the global coffee export market with total exports during the current financial year up to November crossing the \$1-billion mark for the first time, according to data from Centre for Monitoring Indian Economy (CMIE).

- The sharp growth is partly attributed to a surge in Robusta coffee prices, which account for over 40 per cent of global production, and partly due to stocking ahead of the European Union’s new deforestation regulation that could raise the cost of coffee as well as several other agricultural exports to the EU.

- India’s coffee exports rose to a record high of \$1,146.9 million between April and November in FY24, compared to \$803.8 million during the same period last year, registering a 29 per cent rise. This figure is nearly double the exports during the same period in FY21, which stood at \$460 million.

- Global Robusta prices have soared to multi-decade highs due to supply issues in major coffee-producing countries like Vietnam and Brazil.

- Notably, India’s exports of tea saw little change despite expectations of gaining new markets following the economic crisis in Sri Lanka, one of the largest tea exporters in the world.

- A report by the United States Department of Agriculture (USDA) earlier this month highlighted that drought and high temperatures in Brazil during the fruit development and filling period caused Arabica and Robusta yields to fall below initial projections.

- Notably, Brazil is the world’s largest coffee producer, contributing about 40 per cent of global production. Meanwhile, Vietnam, the second-largest coffee producer, has also reported lower production forecasts.



- Coffee Board data showed that Chikkamagaluru, Kodagu and Hassan in Karnataka with 2,48,020 MTs during 2022-23 is the largest producer of Arabica and Robusta coffee. Kerala comes a distinct second at 72,425 MTs followed by Tamil Nadu at 18,700 MTs.

Do You Know:

- Official data revealed that India's top export destination between April and November this year was the European Union, with Italy, Belgium, and Germany accounting for nearly half of total coffee exports. Other significant destinations included Russia, the UAE and the US, which together accounted for about 20 per cent of total exports. The US, Germany, France, Italy are the largest importers of coffee.

- The European Union's Deforestation Regulation (EUDR), aimed at preventing products sold in the EU from being sourced from deforested land, was scheduled for implementation in December. However, the European Parliament recently decided to extend the regulation's timeline by another year.

- According to the think tank Global Trade Research Initiative (GTRI), the EUDR is expected to impact India's agricultural exports to the EU, valued at \$1.3 billion, more severely than exports from competing countries due to India's higher deforestation rate.

ON BLINKIT'S 10-MINUTE AMBULANCE SERVICE, GOVT'S 'LAW OF LAND' CAUTION

A day after Zomato-owned quick commerce platform Blinkit said it was launching a 10-minute ambulance service, Union Commerce Minister Piyush Goyal sounded caution that the firm would have to adhere to India's "legal requirements" while offering the service.

- "As regards Blinkit with ambulance service or medicines being delivered, my only submission would be that they have to make sure that they meet the law of the land, and whatever other legal requirements should be properly taken care of. No laws of the land should be broken," Goyal told reporters Friday.

- Experts said that Blinkit's legal responsibilities include ensuring that its ambulance is designed and constructed as per norms laid out by the Ministry of Road Transport and Highways under the Central Motor Vehicle Rules and the Automotive Industry Standard (AIS) 125, which define the dimensions and structural integrity of the vehicles, among other things. For ambulances supported by the National Health Mission, the obligations of an ambulance operator depend on the memorandum of understanding between the operator and the state governments.

- The move of a major private firm introducing ambulance services raises concerns around the state's accountability for offering basic healthcare services, even if it allows Blinkit to improve its public perception. Experts pointed out that there are regulatory gaps in enforcing current guidelines, apart from the problem of ambulance shortage in the country, which the government's own data shows.

- Notably, the Covid-19 pandemic highlighted the stark shortages of ambulances across the world, including in India, with people in need of immediate medical care struggling to find an ambulance service to a hospital. Generally, the high cost of securing ambulances in crucial times also make them inaccessible for several people.



- India's ambulance services range from basic life support (BLS) to advanced life support (ALS) units, which are designed for specific medical needs. BLS ambulances are more useful during straightforward emergencies as the units focus on basic techniques like CPR, rescue breaths, and using an Automated External Defibrillator (AED) to stabilise and support life functions. ALS ambulances, on the other hand, provide advanced medical interventions for critically ill or injured patients, and come equipped with advanced airway management, IV access, medication administration, and advanced cardiac life support.
- Patient transport vehicles (PTVs), take a larger share of the currently available ambulances in India. These ambulances are typically used for non-emergency medical situations, as they do not have most of the advanced systems present in an ALS ambulance. However, the share of ALS ambulances needs to increase in the country, to reduce trauma-related mortality within the critical "golden hour" timeframe.
- The Ministry of Health and Family Welfare has launched the National Ambulance Services (NAS) under the NHM. As per the ministry, An ALS ambulance is supported for an average population of 5 Lakh and a BLS ambulance is supported for over one lakh population. States are at liberty to propose the number of ambulances as per the norm to fill the gap.

Do You Know:

- As per data available with the National Health Mission, India had only 17,495 operational basic life support (BLS) ambulances until December 2023. The number of advanced life support ambulances was even lower, with 3,441 such operational vehicles. The data also showed the wide regional disparity in ambulance availability, particularly in the north eastern states, where ALS ambulances are hard to come by.

DreamIAS



LIFE & SCIENCE

ALL EYES ON PSLV-C60 MISSION AS ISRO LOOKS TO END 2024 ON A HIGH

The Indian Space Research Organisation (ISRO) hopes to end 2024 on a high with an exciting mission on the launch pad to test technologies that will one day be used for interplanetary and human spaceflight. It also hopes to kickstart preparations for human spaceflight missions that have already been delayed for years.

Mission updates

PSLV-C59: The PSLV-C59 mission dedicated to NewSpace India Ltd. (NSIL) placed the European Space Agency's (ESA) Proba-3 spacecraft — short for 'Project for Onboard Autonomy' — into a highly elliptical orbit of 600 km x 60,500 km as planned 18 minutes after liftoff. The liftoff was from the Satish Dhawan Space Center's first launch pad at 4:04 pm IST on December 5. This mission demonstrated the ability of ISRO's Polar Satellite Launch Vehicle (PSLV) to launch a spacecraft into such orbits.

After the launch, the ESA said the Yatharagga station in Australia began receiving telemetry from the satellite "almost immediately after separation." The telemetry will be passed on to the ESA's mission control centre in Belgium.

Gaganyaan: Ahead of its experimental flight of Launch Vehicle Mark 3 (LVM-3) X in 2014, ISRO had wanted to test the vehicle's ability to fly through the thickest part of the earth's atmosphere. The organisation designed a suborbital flight for this with an altitude of 126 km and a range of 1,600 km from Satish Dhawan Space Centre. The vehicle didn't carry a cryogenic engine in its third stage and didn't reach earth orbit by design.

The LVM-3 X test flight also tested the reentry characteristics of the crew module using the Crew-module Atmospheric Re-entry Experiment (CARE). On December 18, 2014, the CARE module re-entered the earth's atmosphere after separating from the rocket and performed a controlled landing in the Bay of Bengal using its thrusters and parachutes. This successful mission was an important precursor to India's human spaceflight mission.

Ten years later, on the same day, December 18, 2024, ISRO began assembling the human-rated LVM-3 (HLVM-3) for its first uncrewed mission. This was done by stacking the nozzle end segment of the S-200 solid rocket motor with the full flex seal nozzle at 8.45 am on December 18. This marked the official launch campaign for the HLVM-3 G1/OM-1 mission. 'G1' stands for the first Gaganyaan mission, and 'OM-1' for the first orbital module mission. The orbital module consists of the crew module and a service module.

PSLV-C60 SpaDeX

Just like the CARE mission preceded the human spaceflight mission, the SpaDeX — short for 'Space Docking Experiment' — is a predecessor to ISRO's Bharatiya Antariksh Station (BAS) and the Chandrayaan-4 missions. SpaDeX will demonstrate in-orbit docking.

The year 2024 began with a PSLV flight and looks like it will end with one as well. The PSLV-C60 flight is currently scheduled for 9.58 pm on December 30, 2024. The rocket will carry two satellites called SDX01, dubbed 'Chaser,' and SDX02, dubbed 'Target.' Each weighs 220 kg. After



launch and orbit insertion, the two satellites will rendezvous in low earth orbit, dock, and then undock.

In addition, the fourth stage of the PSLV-C60 rocket will carry 20-plus payloads of its own, designed by various ISRO centres, academic institutions, and Indian private companies. After inserting the satellites in orbit, the fourth stage will enter an orbit of its own, where its payloads will perform various tests.

The PSLV-C60 mission will fly the rocket in its core alone configuration (called CA): i.e., its first stage will fly without its strap-on boosters.

The 'Chaser' and 'Target' satellites will be placed in a 470-km-wide circular orbit with an inclination of 55°. The duo will also have different velocities such that the gap between them increases to 10-20 km after a day.

The propulsion system on board the 'Target' satellite will be used to slow it down to the same speed as the 'Chaser' over time. They will eventually maintain a distance of 20 km in the same orbit heading up to the SpaDeX mission's first milestone, called far rendezvous. Then they will move closer such that the gap drops to 5 km, 1.5 km, 500 m, 225 m, 15 m, and finally 3 m. Then 'Chaser' and 'Target' will dock.

After a rigid mechanical connection is realised between the two satellites, electrical power transfer between 'Target' and 'Chaser' will be demonstrated before they undock and drift apart.

They will then operate their on-board payloads with a mission life of two years. The 'Chaser' has a high-resolution camera. The 'Target' has a miniature multispectral payload and a radiation monitor. Earlier, an Indian private space company named Ananth Technologies became the first of its kind to integrate and test the two satellites.

POEM's two dozen payloads

PSLV-C60's fourth stage, called the PSLV Orbital Experimental Module (POEM-4), carries 24 payloads: 14 contributed by various ISRO centres and 10 by academia and private industry. POEM-4 will begin operations after satellite separation.

Of these, the Relocatable Robotic Manipulator-Technology Demonstrator, a.k.a. the 'Walking Robotic Arm,' developed by ISRO Inertial Systems Unit (IISU), is expected to demonstrate a robotic arm that can move to defined targets on the POEM using an inchworm walking technique.

The Vikram Sarabhai Space Center (VSSC) developed the Debris Capture Robotic Manipulator. In a proof of concept, it will attempt to capture tethered space debris with a robotic manipulator. The VSSC also built the Compact Research module for Orbital Plant Studies to study the germination and growth of eight cowpea seeds in a five- to seven-day experiment in a controlled environment.

The other experiments from ISRO centres include — to quote from a press release — the Gradient Control Reaction Wheel Assembly (IISU), the Multi-Sensor Inertial Reference System with in-house gyroscopes (IISU), the MEMS-based High Angular Rate Sensor (VSSC), the Lead Exempt Experimental System (VSSC), the Highly Configurable Onboard Common Controller (Space Physics Laboratory), and the PILOT-G2 payload (Indian Institute of Space Science and Technology) "that hopes to qualify in-house equipment for small satellites."



One experiment of note is the Amity Plant Experimental Module in Space (APEMS) payload developed by Amity University, Mumbai. It will compare growth-related changes in plant callus cells using spinach plants (*Spinacia oleracea*) in microgravity and earth gravity. For this, two parallel experiments will be carried out — one on POEM 4 and the other at Amity University.

Another biological payload of note is the RVSat-1 developed by R.V. College of Engineering, Bengaluru. It will measure the growth of the gut bacterium *Bacteroides thetaiotaomicron* in space. The experiment is expected to provide data to understand human physiology in space and astronaut health during crewed missions.

There are two notable communications payloads called the BGS Amateur Radio Payload for Information Transmission (ARPIT) and Swetchasat. BGS ARPIT was developed by the S.J.C. Institute of Technology, Karnataka, and the Upagraha Amateur Radio Club at the U.R. Rao Satellite Centre. It can transmit audio, text, and images from a satellite to the ground with frequency modulation in the VHF band. It is designed to provide amateur radio satellite services worldwide.

The Swetchasat payload, developed by Nspace Tech, a private entity in Andhra Pradesh, plans to demonstrate an onboard UHF transmitter's capability to store data and establish a communication link and transmit data and telemetry with the ISRO Telemetry and Tracking Command ground station.

There are two propulsion payloads developed by private industry. RUDRA 1.0 HPGP, developed by Bellatrix Aerospace, will test a green propulsion system with a thrust of 1 newton and a specific impulse of 220 seconds. Likewise, the VYOM 2U developed by Manastu Space will test a monopropellant the company has said is a safer and better performing alternative to hydrazine, which is the most widely used propellant in the Indian space programme at present. VYOM has a thrust of 1.1 N and a specific impulse greater than 250 seconds.

Two payloads will also be hoping to demonstrate synthetic aperture radar (SAR) capabilities. SAR creates high-resolution images of objects on the ground by moving a radio-emitting antenna over the objects of interest. The SAR Imaging Demonstration Payload (GLX-SQ) from GalaxEye Space will test the generation, capture, and processing of SAR images in a space environment. The Varuna payload, from Piersight Space, will demonstrate SAR in a cubesat form factor and test the performance of seven advanced subsystems — including a deployable reflectarray antenna — that can help monitor all human and industrial activities at sea.

Finally, the MEMS-based Inertial Measurement Unit (STeRG-P1.0) was developed at the MIT World Peace University, Pune, and the MOI-TD by the private company TakeMe2Space. STeRG-P1.0 will perform attitude determination and higher efficiency data processing. The MOI-TD payload is a technology demonstrator planning to perform real-time data processing for earth observation. It will attempt to receive three machine learning models through an uplink from ground to orbit, conduct in-orbit computation, and downlink the models' inferences.

Onward to 2025

The year 2025 will be a pivotal year in Indian spaceflight with the launch of the first uncrewed HLVM-3 missions to orbit. Indians will potentially get to see the sight of the first Indian in space since Rakesh Sharma in 1984 when Shubanshu Shukla flies — schedule permitting — to the International Space Station on board a Falcon 9 rocket as part of the Axiom 4 mission in 2025. We will also have the launch of the innovative NASA-ISRO SAR mission. In all, 2025 promises to be an action-packed and, by all means, a defining year for space for India.



10 PAYLOADS OF ISRO'S POEM-4 MODULE DEPLOYED SUCCESSFULLY

The Indian National Space Promotion and Authorization Centre (IN-SPACe) on Tuesday said that it had facilitated the successful establishment and operationalisation of 10 hosted payloads from non-government entities (NGEs) on board the POEM-4 module of the PSLV-C60/SpaDeX mission.

The mission was launched by the Indian Space Research Organisation (ISRO) on Monday.

“The mission that launched today, carried out in-orbit scientific experiments at an altitude of 350 km with a 55-degree inclination, utilizing the spent PS4 stage repurposed as the PSLV Orbital Experimental Module (POEM-4),” said IN-SPACe, which is the autonomous nodal agency under Department of Space to promote NGE’s undertake space activities.

Reducing entry barriers

“The PSLV Orbital Experiment Module is a practical solution deployed by ISRO that allows Indian start-ups, academic institutions, and research organizations to test their space technologies without the need to launch entire satellites. By making this platform accessible, we are reducing entry barriers and enabling a wider range of entities to contribute to the space sector,” Pawan Goenka, Chairman, IN-SPACe, said.

“At IN-SPACe, our role is to create opportunities for such collaborations and ensure that India’s private sector can grow alongside advancements in space technology. Missions like these will be instrumental in capacity building by enabling NGEs to get their payloads space qualified, thus augmenting their future satellite launch missions,” he added.

In total, 24 PS4-Orbital Experiment Module payloads were deployed on board the PSLV-C60 SpaDeX mission to support a wide array of scientific and technological endeavours.

PARKER PROBE GETS CLOSEST-EVER TO THE SUN: WHY THIS MATTERS

NASA scientists announced on Friday (December 28) that the Parker Solar Probe survived the closest-ever approach to the Sun. The craft was operating normally after it passed just 6.1 million km from the solar surface.

- Launched in 2018, the Parker Solar Probe was developed as part of NASA’s Living With a Star program to explore aspects of the Sun-Earth system that directly affect life and society on Earth.
- It is designed to make observations of the Sun’s upper atmosphere, known as the corona, and carries four instrument suites.
- Over the years, it has completed 21 orbits around the Sun, with flybys of Venus gradually moving closer to our star. The Parker Solar Probe is the closest any human-made object has ever come to the Sun.
- Travelling at the speed of 6,92,000km/h, it endured temperatures up to 1,377 degree Celsius when it reached the closest to our star which occurred on December 24. The probe went out of contact during this but the scientists operating it received the signal on the night of December 26.
- The craft was able to survive such high temperatures as it is protected by a 4.5-inch-thick (11.43 cm) carbon-composite shield.



- The probe circulates a single gallon of water through its solar panels which helps it keep its cool — the water absorbs the heat, and then radiates it out into space.
- Scientists are hoping that as the probe passed through the Sun's outer atmosphere – the corona – it would have collected data that can give clues about some long standing questions. For instance, researchers expect to solve the mystery around why the corona is so hot — temperatures regularly reach 1 million to 2 million degree Celsius there.
- The data could also give an idea about the origins of solar winds, a continuous flow of material escaping the Sun. A better understanding of solar winds is crucial as it affects not only the space environment but also life on Earth.
- Solar winds are usually deflected by Earth's magnetic field, which acts like a protective shield. Still, sometimes particles interact with atoms and molecules in the atmosphere to produce the phenomena of the northern and southern lights. However, a strong solar wind can disrupt power grids, satellites, and communication systems.

WILLOW IS A SMALL CHIP FOR GOOGLE BUT A QUANTUM LEAP FOR COMPUTING

Google recently unveiled its latest quantum processor, named 'Willow.' The research team that built it also tested it, and the results were published in *Nature*.

They created a great level of buzz about the realisability of quantum computers that could tackle many practical problems.

The results also kicked up intriguing debates about explaining the power of quantum information processing and how they could solve problems that even the most powerful classical computers struggle with.

Bit versus qubit

Computers process information stored in an array of 0s and 1s. In classical computers, some physical system with two possible states is used to represent these 0s and 1s. These physical systems are called bits. A common example is an electric circuit that allows two levels of voltage, one called 0 and the other called 1. A classical computer is a collection of bits together, and the information flowing in and out of bits is controlled and manipulated by physical operations called gate operations. For example, an 'AND' gate accepts two inputs, each either 0 or 1, and outputs 1 if both inputs are 1 and 0 for any other combination of inputs.

A quantum bit, or qubit, has two distinct states representing 0 and 1. More importantly, a qubit can be in states that are also combinations of 0 and 1. This feature is called quantum superposition. Classical bits can't do this. Because of this ability, each qubit needs two distinct numbers to represent the contributions of 0 and 1 respectively, in the qubit's state. If we have two bits, we need two numbers, one for each bit, to represent the state of the collection. With two quantum bits, we need four numbers to represent the state. For 10 bits, we need 10 numbers to represent the state of the collection. For ten qubits, we need 2^{10} (1,024) numbers.

This exponential growth in the information required to represent qubits' states and the superposition of states are the major reasons why quantum computers could be more efficient and powerful than classical computers. Like a classical computer, a quantum computer is also a



collection of qubits and a host of physical operations called quantum gates that change the states of qubits to perform calculations.

Difficult to isolate

A major impediment to realising quantum computers is the fragile nature of quantum states. Specifically, while classical bits are robust and long-lasting, qubits are fragile and collapse quickly at the slightest disturbance. This in turn limits the amount of time for which qubits can hold information, how errors-free the quantum computer can keep its calculations, and how well a quantum computer can be scaled.

It is difficult to isolate a physical gadget to avoid perturbations due to external noise. Therefore, computations are prone to errors. For example, when a bit is expected to represent 0, there is a small chance it may be in the state representing 1. This is called the bit flip error. Methods to identify and fix these errors are called error-correction protocols.

A single 0 is represented by three bits in the state 000 (corresponding to each bit in the state 0). If there is a bit-flip error, the resulting state could be 100, 010, or 001 (depending on whether the first, second, or third bit is flipped). Similarly, 1 is represented as 111. If we need to encode 01 as the basic information, its true representation is 000111. Looking at the concatenated sequence in groups of three bits, the occurrence of 100, 010, 001, 011, 101, or 110, will mean an error has crept in. When three physical bits represent one logical digit, it is easy to figure out which bit has flipped and correct it suitably before the next step in the computation.

Similarly, one way to mitigate the effect of errors in a quantum computer is to correct them using additional qubits that keep track of errors creeping in during computations. This is a logical answer to the error problem; it is, however, unsuitable for qubits in superposed states. Creating exact copies of unknown superposed states is prohibited by the no-cloning theorem of quantum physics. On the other hand, error correction often requires redundancy, i.e., providing more qubits than what is needed to encode information. This makes it clear that more than one physical qubit is needed to represent a single logical qubit. (Qubits also have another type of error called phase flip error, which presents similar challenges to error correction.)

One effective method to detect and correct errors in a quantum computer without also violating the no-cloning theorem is called surface code. Here, engineers arrange an array of qubits on a grid. The qubits are grouped into two categories, namely data qubits and measurement qubits. While the error in data qubits is what we wish to identify and correct, any attempt to measure them will force them out of superposition, and whatever information they encode will be lost.

To avoid this, the surface code method provides the set of measurement qubits. These qubits are entangled with data qubits through suitable gate operations. (If two qubits are entangled, any measurement of one particle will instantaneously cause the other particle to lose its superposition state.) In this setup, the presence of errors in the data qubits is inferred by making suitable measurements of the measurement qubits while using the gates to prevent the data qubits from being affected, and thus correcting inconsistencies in data qubits.

The error rate

According to Google, its new quantum processor, Willow, has significantly better error correction and is thus significantly faster than other quantum computers, not to mention classical computers



as well. The researchers who developed it tested it by using it to solve a computationally hard problem.

Willow houses 105 physical qubits and operates at temperatures close to the theoretically possible lowest temperature (0 K, -273.15° C). Nearly half of these are data qubits, and the remaining are measurement qubits. The superconducting qubits are not strictly two-state systems. When performing gate operations, the physical system can get excited or 'leak' to states other than 0 and 1. These excited states can subsequently interfere with the computations and introduce errors. So a few qubits — i.e. the measurement qubits — are reserved to correct such leakage errors.

Coherence time is the duration over which an intended state (typically, superpositions) of a qubit can survive without being changed due to interactions with the environment or with other parts of the computer. The coherence time of data qubits on Willow is about 100 microseconds, which is more than the coherence time of the physical qubits. This is a consequence of the error correction protocols used. This in itself is an interesting result because it means the information-holding time can be improved by external manoeuvring.

The next milestone for researchers to achieve is to lower the error rate — calculated as the ratio of the number of qubit errors to the number of gate operations — as they build ever-larger quantum computers with more physical qubits and more error correction operations. Google alone has progressed from 3-by-3 to 5-by-5 to 7-by-7 arrays of data qubits, and the error rate has decreased by more than half in each step.

What one expects for a collection of qubits on a circuit is that the error rate either remains the same or increases as the number of qubits is increased. That the error rate becomes smaller as more qubits are added is the below-the-threshold capability of Willow's architecture and operation. This is vital to achieving quantum processors with enough qubits that perform almost error-free computations of problems of practical relevance — the ultimate goal.

No dead ends

The particular computationally difficult task with which Google tested Willow is called random circuit sampling (RCS). In the RCS task, Willow has to calculate the probability of occurrence of possible strings of 0s and 1s in the output when the quantum gates that act on the qubits are chosen randomly. If there is no noise, RCS is a computationally hard task, meaning that the number of calculations required to make the prediction increases exponentially with the input size.

Willow completed the RCS task for random gate operations realisable on Willow in a few minutes. The researchers estimated that the same task on the most powerful classical computer available today would take 10 septillion years (i.e., 1 followed by 24 zeroes). To compare, the universe's age in years is approximately 1 followed by 10 zeroes. It is plausible that classical computers running better algorithms may eventually match Willow's feat, although researchers are not aware of such improvements today.

Researchers are still a long way away from realising quantum processors of reasonable size to be useful in practical contexts. This said, it's only natural that Willow created the sort of buzz that it did: it has shown that the major issues in realising a reliable quantum computer can be addressed and surmounted, that they are not dead ends. The work of the Google team provides hope that quantum computers may soon help us unravel nature's mysteries and also solve computationally



difficult problems in drug design, materials science, climate modelling, and optimisation, among others — all with deep societal impact.

FROM GEMINI TO LLAMA: HOW AI TITANS SHAPED THE INDUSTRY

Artificial Intelligence (AI) was seen as novelty in 2023 with the launch of ChatGPT just a month before the start of that year. Microsoft CEO Satya Nadella, after investing \$10 billion in OpenAI, threw down the gauntlet to Google, taunting the DeepMind owner to show what its AI could do. Google tottered with its half-baked Bard bot that spewed out inaccurate answers. In subsequent months, the Alphabet-owned company went through a baptism of fire and finally came out with a rechristened AI, Gemini, by the end of 2023.

Building on that momentum, the search giant steadily rebuilt its reputation and began infusing Gemini's capabilities in almost all of its products and services in 2024. Google's recent AI advances, including the second generation of Gemini, the Trillium AI accelerator chip, and breakthroughs in quantum computing with the Willow chip, have significantly boosted investor confidence, driving its stock price to a record high.

OpenAI did not give Google's Gemini an easy run. The competition between the two Silicon Valley giants was intense. Both the firms launched advanced AI models with improved reasoning capabilities.

OpenAI's o3 model built on top of its predecessor, o1, by focusing on enhanced reasoning skills, outperformed previous models in complex coding and advanced mathematics. Similarly, Google's Gemini 2.0 Flash Thinking model answered complex questions by outlining its thought process, enhancing the model's reasoning capabilities. OpenAI's o3 model, with its advanced reasoning capabilities, garnered more attention from Microsoft as the tech giant relies on OpenAI models for its AI assistant, Microsoft 365 Copilot. While o3 promises better performance, its increased cost and computation time are significant considerations for business applications.

Anthropic's Claude and Mistral AI

It wasn't just Google's turn-around this year. Product launches and updates from a clutch of other AI companies have, in some instances, stolen OpenAI's thunder this year. Amazon-backed Anthropic upgraded its AI model, Claude 3.5 Sonnet, with a "computer use" capability. That feature enables the AI to autonomously perform tasks such as moving the cursor, typing, and browsing the Internet, effectively automating complex computer interactions. This development aims to enhance productivity, particularly for software developers, by allowing the AI to execute multi-step actions with minimal human intervention.

Another area Anthropic made strides this year was in how it implemented safety measures. During the U.S. presidential election, with its Clio tool, it analysed AI usage to ensure responsible AI deployment. In another instance, the AI company allowed the U.K.'s AI Safety Institute to early-test its Claude 3.5 Sonnet model.

French AI company Mistral for its part brought in a certain level of transparency in AI with its open-weight models, including Mistral 7B and Mixtral 8x7B, designed for customisation and deployment across various applications. These models were available under open licences, promoting accessibility and innovation within the AI community. Mistral Large 2, the startup's flagship model, was integrated into IBM's Watsonx platform, offering enhanced capabilities in code generation, mathematics, and reasoning. In November, the France-based startup expanded



into the U.S. by establishing an office in Palo Alto, California, a strategic move aimed at attracting top AI talent and enhancing the company's sales operations. Such moves show how Silicon Valley continues to be the epicentre for top tech talent.

Mistral AI also collaborated with Qualcomm to bring new generative AI models to devices powered by Snapdragon and Qualcomm platforms, indicating a focus on enhancing AI accessibility and performance in consumer electronics.

Meta's Llama

Meta's large language models (LLMs), while quite late to the AI race, aren't far behind. In some ways, Facebook's parent company can be credited for modularising AI models with its Llama models. In April, Meta released Llama 3, offering models with 8 billion (8B) and 70 billion (70B) parameters. These models were pre-trained on approximately 15 trillion tokens from publicly available sources, with fine-tuning on over 10 million human-annotated examples. With performance in coding, reasoning, and multilingual support, Llama 3 was positioned by Meta as an open-source AI model. In July, Llama 3.1 expanded the context windows for the 8B and 70B parameters models. Plus, it also launched a 405 billion (405B) parameter model. In September, Meta introduced Llama 3.2, featuring models with 1B, 3B, 11B, and 90B parameters. This version marked a significant milestone by incorporating multimodal capabilities, allowing the models to process both text and images. Additionally, Llama 3.2 was optimised for deployment on edge and mobile devices, broadening its applicability.

Llama models were gradually integrated into Facebook, Instagram, and WhatsApp, enhancing user experiences with AI-driven features like real-time translation and content generation. By the end of 2024, Llama had received a wider adoption with over 650 million downloads, according to a company blog, citing downloads from Hugging Face.

Meta's Llama and Mistral AI are giving open-source alternatives to the OpenAI-style closed source AI models. Open-source models allow a broader audience to engage with AI technology, facilitating collaborative development and rapid innovation. This openness contrasts with the closed nature of proprietary models, which restrict access to underlying code and data.

Developers can customise open-source LLMs to specific needs, enhancing versatility across diverse applications. This adaptability is often limited in closed-source models due to proprietary restrictions. While open-source models offer benefits, they may face challenges in matching the performance and specialised capabilities of proprietary systems. Proprietary models often have access to extensive resources and data, enabling them to achieve higher performance in certain tasks. And success in AI is dependent on the kind of data the models are trained in.

On-device experience

In 2024, AI models were increasingly deployed across various devices to bring their capabilities closer to end-users, enhance functionality, and provide real-time experiences. For instance, in smartphones and tablets, Apple's Neural Engine, Qualcomm's Snapdragon AI Engine, and Google's Tensor chipsets were integrated with LLMs and vision models to power various tasks, including voice assistants like Siri and Google Assistant, real-time image processing for photo enhancements and augmented reality, and multimodal AI for speech, text, and image-based queries.

Apple's incorporation of AI features into its latest iPhones, such as Visual Intelligence and Image Playground, has revitalised consumer interest, contributing to a significant increase in iPhone



sales. This integration has positioned Apple on the brink of becoming the first company to surpass a \$4 trillion market capitalisation.

PC manufacturers are fully embracing AI by integrating AI accelerators such as NVIDIA GeForce RTX series GPUs, AMD Radeon chips, and Apple's M-series chips. These accelerators enable generative models and advanced features like AI-powered transcription and video editing tools, enhanced productivity tools, and gaming enhancements including real-time ray tracing and AI-driven non-playable characters (NPCs) to run on the device.

Talent is key

At the core of the current AI revolution lies a dual-engine system. One engine is responsible for training the data, while the other leverages the trained data to make inferences. To effectively operate these engines, hardware resources alone are insufficient. Human expertise plays a crucial role. This has become a pain point for OpenAI in particular as it has been bleeding top talent this year. A notable departure from the AI giant is co-founder Ilya Sutskever. The company also lost its chief technology officer Mira Murati, and several other leading computer scientists.

To make matters worse, some of the departing members are joining rivals. For instance, John Schulman, another OpenAI co-founder, moved to Anthropic. Mr. Schulman is a key leader in the creation of ChatGPT.

According to a BCG analysis of top skilled labour, AI experts are the most mobile at nearly 11 out of 100 experts moving internationally every five years. So, where they go can make a big difference. Companies and countries that attract the best talent can gain a competitive edge in the tech world. Countries that are open to global talent tend to invent more and grow faster. As countries compete for leadership in AI, their ability to attract top talent is crucial for their success.

AI IN 2025

- So with all the caveats that the fast-moving technologies of our times warrant, here are our predictions for what to expect in the world of tech in 2025.
- Takeover by AI agents: The adoption of AI agents that can perform certain tasks without any guidance, learn from their mistakes, and even make decisions on these tasks, will become the more popular way to adopt AI for enterprise as well as consumer uses.
- Death of dashboards: AI has started to make data more accessible, removing hurdles of skill behind analysing large data sets. This will gradually lead to dashboards being replaced by GenAI tools that answer specific data questions with visualisations, trend lines, or even predictions based on their visibility.

Do You Know:

- Artificial Intelligence (AI) is the ability of machines, especially computers, to perform tasks that typically require human intelligence. These tasks include things like understanding language, recognising patterns, solving problems, and making decisions.
- AI can be classified into two types: Artificial Narrow Intelligence (ANI) also known as weak AI and Artificial General Intelligence (AGI) also referred to as strong AI.



- ANI is designed for specific tasks and excels within a narrow domain. Examples include virtual assistants like Siri, recommendation systems on platforms like Netflix, and image recognition software. ANI systems are highly specialised and cannot transfer their expertise to unrelated tasks.
- In contrast, AGI aims to replicate human cognitive abilities, enabling it to perform any intellectual task a human can do. AGI would possess general reasoning skills, understand context, and adapt to new situations across various domains. It would be capable of autonomous learning and problem-solving without requiring task-specific programming.
- Machine Learning (ML) and Deep Learning (DL) are subsets of AI but differ in complexity and capabilities. ML involves training algorithms to learn from data and make predictions and often requires manual feature extraction.
- DL, a subset of ML, uses neural networks with many layers (hence “deep”) to automatically learn features from large datasets. While ML works well with smaller datasets, DL requires vast amounts of data and computational power.

SPEED OF HUMAN THOUGHT LAGS FAR BEHIND INTERNET CONNECTION: WHAT DOES A NEW STUDY SAY?

Human brain processes thought at a much slower rate than the rate of information transmitted over the Internet, according to a new study.

While the speed of information flow in the human brain is just 10 bits per second (bps), a typical wi-fi connection processes 50 bps. One bit is the smallest unit of data that a computer can process and store.

The study, “The unbearable slowness of being: Why do we live at 10 bits/s?”, was published by the journal *Neuron* earlier this month. To carry out the analysis, the researchers examined data on human behaviours such as reading, writing, etc.

What are the findings of the study?

Markus Meister, a neuroscientist at the California Institute of Technology and an author of the study, told *The New York Times* that “It is a bit of a counterweight to the endless hyperbole about how incredibly complex and powerful the human brain is... If you actually try to put numbers to it, we are incredibly slow.” The researchers noted that the human brain processes sensory information from sight, smell and sound much more rapidly — about 100,000,000 times the rate that cognition does. In other words, while humans can process one thought at a time, their sensory systems — and computers — process thousands of bits of information at once. “Psychological science has not acknowledged this big conflict,” Meister told *The NYT*.

The slow pace of conscious thought could be a result of how human brains have evolved. “Our ancestors have chosen an ecological niche where the world is slow enough to make survival possible,” according to the study. “In fact, the 10 bits per second are needed only in worst case situations, and most of the time our environment changes at a much more leisurely pace.”

Some researchers are not entirely convinced by the findings of the new study. Britton Sauerbrei, a neuroscientist at Case Western Reserve University told *The NYT* that the study may not have



fully captured the flow of information in the human nervous system. If those were included, “you’re going to end up with a vastly higher bit rate,” he said.

UNDERSTANDING THE PHYSICS BEHIND COOKING A TADKA

Cooking is often called an art, and just like art can be incomprehensible at times, so can exotic cooking be inedible. But that just says more about the audience (or the designated eater) than the painter (or the cook).

At least, this is what I told myself when, a few years ago, I had invited a few friends over and made a vegetable curry that they simply refused to eat.

They said a curry couldn’t really be a curry if its tadka had been cooked in water rather than in oil. In my defence, I had realised quite late that I’d run out of oil in my kitchen. There was nothing other than water around and I’d chopped the vegetables as well

I was vociferous that water was healthier than oil for the body but eventually I had to concede: my curry wasn’t the curry. But I remain curious, too. Why does one have to use oil to cook the tadka?

Oil and water

In most Indian curry preparations, the tadka is the first step: in a bit of heated oil, the cook puts either cumin (jeera) or mustard seeds. A series of sharp chirps sound, the cook proceeds to add the vegetables and launch into the preparation. In these first few seconds, the flavours of the aromatic seeds seep into the food.

Now, oil and ghee are funny liquids. When you spill some oil, it moves quite slowly, unlike water, which instead moves faster. Place a few drops of oil in a cup of water and it floats. This is unusual: honey or even dishwasher liquid move slowly on a surface but they are also denser than water. How can oil be both sluggish and lighter? The answer lies with oil’s molecules. Oil is made of long chains of large molecules that spiral and stick to each other — not unlike a bunch of noodles or earphone wires. That makes oil a sluggish mover and also hard to separate. These noodle-like molecules of oil render it another important property: a high boiling point.

The boiling point of oil

The boiling point of any liquid is the temperature at which the liquid becomes gas. It’s a common sight when we heat water on the stove: even on a high flame, a pot of water takes some time to turn to vapour. Water (at room temperature and pressure) has a boiling point of around 100° C.

So you need to supply enough heat to the water to increase its temperature to 100° C. Once you do, any extra heat will convert the liquid to gas.

Alcohol-based liquids like nail-polish removers have lower boiling points and quickly vaporise. If you rub some hand-sanitiser on your palm, for example, it will dry up in less time than it takes for you to read this sentence. Room-temperature gases such as nitrogen and oxygen have very low boiling points — much lower than 0° C — so we (fortunately) always have them as a gas, even during a harsh winter.



The reason different things have different boiling points is because they have different molecular structures. Liquids whose molecules are easy to separate from each other have lower boiling points while those whose molecules are tightly bound to each other have higher boiling points.

Oils have large, complicated molecules that wind around each other and thus they have high boiling points. For example, mustard oil boils at about 150° C and ghee at about 250° C. So even as you heat a bit of oil in your pan, it hangs around for longer than water does before starting to disappear.

Which brings us to the more important question: why do we want to cook seeds with such heat?

Aroma blasts

An equally important question is why we like to have cumin seeds in our foods. Cumin as well as mustard seeds have aromatic compounds.

Think of them as tiny, hollow spheres with some powder inside. The way to get these powders out efficiently is to blow them up. Thus, you toss the seeds into hot oil. The air inside the seed is heated and expands. When the pressure is too much, the seeds' shells burst open, ejecting their contents. It's like when you pump a balloon too much and it rips apart in a bang. In the process, the seed bursts shoot sound waves through the air that you hear as the crisp chirps.

The same thing happens when you fry a puri. As soon as you put an uncooked puri into the oil, the water and air inside expand, turning it into a ball filled with vapour. Sometimes the vapour can crack the wheat open and escape.

Back to the tadka: the seeds can be blown open only if the tiny air inside expands quickly. If it expands slowly, it will also just leak from a pore and the seed won't pop. So you need a liquid that can get hot enough as well as remain hot. Oils are better to cook tadka than water for this reason. They can get hot enough and sustain the heat for longer.

If you use water like I did, the seeds won't pop. Perhaps you can try it at home under careful supervision. Boil a cup of water and toss in some cumin or mustard seeds. Try as you will, you won't hear any popping sounds. The seeds will just float on the water.

The real taste of your daily dal tadka has to do with the physics of oil molecules and seed explosions.

Tadka as art

Since my friends refused to imbibe my curry, I have made sure my kitchen is always well-stocked with oil, but even then getting the tadka just right is hard.

But if you want to learn the actual physics of tadka, carefully observe the artist, the cook, as they perform the tadka next. The real beauty of science is hidden in this art.

DURIAN FLOWERING

What triggers the flowering of durians?

Based on observations of 110 durian plants, researchers have discovered that around 15 days of dry weather can trigger the flowering of durian plants. The flowering occurred around 50 days after an approximately 15-day dry spell, independent of whether the plant was grafted or grown

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from a seed. The team found that durian plants flowered approximately 50 days after a prolonged period of dry weather. These dry spells needed to be long enough to show up in moving average traces, specifically periods where rainfall averaged over 15-day windows was less than 1 mm. They proposed that there was some relationship between the flowering of durian and the more general burst of flowering seen in the tropics following long dry spells. But such general flowering events require a longer dry spell of around 30 days to occur. This explains why durians tend to flower multiple times a year, while synchronised flowering across species occurs once every few years.

SCIENTISTS DISCOVER 'ULTRABLACK' BRAZILIAN VELVET ANT: STUDY

The first thing to understand about velvet ants is that they are not, in fact, ants. They're wasps, named in part for their fluffy exteriors. One species of velvet ant, found across the tropical savanna and dry shrub desert in Brazil, is known for its distinct black-and-white markings.

A team of scientists led by Vinicius Lopez, an entomologist at the Federal University of Triângulo Mineiro in Brazil, recently found that the black parts on female velvet ants were actually ultra-black—so matte that they absorbed nearly all visible light. The discovery, published in the *Beilstein Journal of Nanotechnology* last month, makes this species (*Traumatotilla bifurca*) the first known insect among Hymenoptera—the group of animals comprising bees, wasps, and ants—to display such a striking shade.

In nature, some blacks are blacker than others. There's your run-of-the-mill black, which is caused by the presence of melanin and displays some sheen, like the feathers on a crow. Then there's ultra-black, sometimes called super-black, a shade achieved by microstructures that swallow nearly all of the light hitting a surface.

Ultra-black pigmentation is rare in the animal kingdom. In organisms that have it, it helps them hide from predators, regulate body temperature, or even attract mates, as the contrast against brighter colours can be visually enticing.

Lopez's team was trying to uncover different mechanisms for colour production in insects when it realized the velvet ant was unique. Under a dense layer of hair, the insects had an intricate arrangement of thin, stacked platelets that resembled the pages of a book. This, the researchers believe, is key to producing the matte, ultra-black colour. In addition to visible light, the ultra-black markings on female velvet ants also absorb nearly all ultraviolet light. That could be a helpful defence mechanism against predators that can see wavelengths not visible to humans, the scientists said.

But it's not clear that velvet ants actually need the ultra-black pigment for camouflage. Prior work has shown that predators tend to avoid velvet ants because of their hard exoskeletons, their painful stings, and the screeches they let out when in danger. It's also a mystery why only the females of this species of velvet ant are ultra-black.

GRAVE NEW WORLD: HUMAN-INDUCED LOSS OF ELDERS THREATENS VARIOUS SPECIES

As people age, they accrue richer experiences, and their wisdom deepens.

So do animals. From elephant matriarchs to shark grandmothers, the elders of the animal kingdom carry a treasure trove of knowledge, having guided, and still guiding, their families through the uncertainties of life in the wild.

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The earth's life forms are very diverse and unsparingly complex. No two species age the same. Yet there is also a growing body of evidence that older, wiser individuals are crucial in similar ways to many species.

“Because of the diversity in animal social systems, the important position that older individuals often occupy can be for a variety of reasons, but often involves them either being particularly dominant individuals who stabilise the social hierarchy in some way through their presence or by acting as repositories of information that they've acquired over their lifetime — which can be particularly important when times get tough,” Josh Firth, an associate professor at the University of Leeds, said.

“There are a range of potential benefits of older individuals across different types of animals. They are not the same for all species,” Keller Kopf, a senior lecturer in ecology at Charles Darwin University, Australia, added.

Without these elders, fish may never find their spawning grounds, and birds would get waylaid as they flew across continents.

Ageing in the wild

A review published in *Science* on November 21 suggested that the worldwide loss of old individuals due to shrinking habitats, hunting, climate change, and other human-caused disturbances can be particularly detrimental to long-lived species.

According to the researchers, protecting a species' elders is important for all its members to be able to pass on their cultures and what they know about adapting to changing weather to their future generations, and to help buffer them against human disturbances.

While this may go for both short- and long-lived species — the mayfly lives for a day, whereas the Antarctic glass sponge can live for millennia — the focus on long-lived species in particular is partly because of data.

“Evidence for the contributions of older individuals in short-lived species is limited,” Kopf, the lead author of the study, said.

Scientists have been studying ageing for decades, but most of their research has focused on the negative effects of biological ageing on human health. Only recently have they been looking at the benefits of ageing in wild populations.

“Research on the benefits of old individuals has been happening in different disciplines in silos,” Kopf said.

What old means

He and his team analysed more than 9,800 peer-reviewed studies from 1900 to 2023, investigating the roles of elderly individuals in several species. These roles included knowledge transmission, assisted parental care, nutrient cycling, and coping with extreme weather.

“Until now, no study has pulled together data across different taxonomic groups to highlight the range of potential benefits of growing old,” according to Kopf.

Before the team could analyse the data, it had to agree on what “old” meant. A three-year-old mouse could be considered old, whereas a 30-year-old elephant could be considered young, Kopf



said. But the lack of data on short-lived species limited the researchers' options to two groups: long-lived mammals and birds (which are often social species that invest significant time and effort in parenting their offspring) and cold-blooded animals (like fish and reptiles, which continue to grow throughout their lifespan).

"Traits such as social behaviour, migration, parental care, and increased reproductive output make older individuals in moderate to long-lived species essential for their ecology and therefore conservation," Kopf said.

"However, this importance exists on a continuum and is not a binary."

Of elephants and orcas

Climate extremes and habitat destruction caused by human activity can hasten the loss of elders in a species and disrupt the stability of populations. Ecologists have documented a cascade of consequences moving through the population when the elders disappear, altering social structures and behaviour.

For example, young elephants of both sexes depend on help from the matriarch, the oldest female and often the largest. One 2011 study of African elephants in the wild found that when they were played recordings of lions roaring, a herd's members would create a defensive formation. Groups led by matriarchs more than 60 years old gathered faster and confronted the threatening calls with more aggression.

"If older individuals are removed from the wild, by capture or unnatural death, younger ones struggle to survive without their knowledge," Anindya Sinha, a professor at the National Institute of Advanced Studies, Bengaluru, said. "Because they are directionless, there might be an increased risk of negative interactions with humans."

"Our work on Asian elephants in Bandipur and Nagarhole National Parks in Karnataka shows that females in herds [with calves] and fewer experienced individuals exhibited high levels of stress hormone," Sanjeeta Sharma Pokhreal, an assistant professor at Kyoto University in Japan, said. A 2018 study she co-authored suggested that the higher stress could be due to lack of help with parental care, the high energy demands of vigilance, and the responsibility of protecting calves from predators.

Studies have also found that older female orcas (*Orcinus orca*) undergo menopause. According to experts, one compelling explanation for this phenomenon is called the grandmother hypothesis. Grandmother orcas stop being able to reproduce so they can help their daughters care for calves, protect them from predators, and guide them to the best feeding grounds.

A new conservation paradigm

Because of the great benefits of protecting the older members of a species, the researchers have advanced a new paradigm called longevity conservation.

"Biodiversity conservation and threatened species policies should protect age structure," Kopf wrote in *The Conversation*. "This is particularly important in long-lived species that produce more offspring with age, or where migration, social networks, and cultural transmission of knowledge are required for survival."



For example, in fish and reptiles, the older individuals lay more eggs and give birth to offspring better equipped to survive environmental fluctuations. So Kopf advocates age and size-based fisheries, management strategies that better protect older individuals.

But significant challenges arise when the longevity conservation paradigm comes in contact with ground realities, such as in India.

More than 700 marine fish species are caught every year along both coasts of the country, with fishing vessels targeting multiple species simultaneously. How experts can implement a management strategy that protects individuals while allowing uninterrupted harvesting is unclear.

“Protecting larger, older fish is important for conservation, but in a multi-species fishery like India, it’s extremely challenging,” Mayuresh Gangal, a research affiliate at the Nature Conservation Foundation, said.

“Different species vary in size as they age, and their life histories differ significantly. On top of that, the fishing gear cannot be very target-specific in multi-species fisheries. It is difficult to tailor gear to target specific species or sizes effectively.”

Kopf also wrote in *The Conversation* that the “loss of old individuals is not yet recognised by the International Union for Conservation of Nature as a means of listing threatened species.”

AMAZON CAPS BRUTAL YEAR OF FIRES, DROUGHT

2024 was a brutal year for the Amazon rainforest, with rampant wildfires and extreme drought ravaging large parts of a biome that’s a critical counterweight to climate change.

A warming climate fed drought that in turn fed the worst year for fires since 2005. And those fires contributed to deforestation, with authorities suspecting some fires were set to more easily clear land to run cattle.

The Amazon is twice the size of India and sprawls across eight countries and one territory, storing vast amounts of carbon dioxide that would otherwise warm the planet.

It has about 20% of the world’s freshwater and astounding biodiversity, including 16,000 known tree species. But governments have historically viewed it as an area to be exploited, with little regard for sustainability or the rights of its Indigenous peoples.

“The fires and drought experienced in 2024 across the Amazon rainforest could be ominous indicators that we are reaching the long-feared ecological tipping point,” said Andrew Miller, advocacy director at Amazon Watch, an organisation that works to protect the rainforest.

There were some bright spots. Forest loss in Brazil’s Amazon, home to the largest swath of this rainforest, dropped 30.6% compared to the previous year, the lowest level of destruction in nine years.

The improvement under leftist President Luiz Inácio Lula da Silva contrasted with deforestation that hit a 15-year high under Lula’s predecessor, far-right leader Jair Bolsonaro, who prioritised agribusiness expansion and weakened environmental agencies.



In July, Colombia reported historic lows in deforestation in 2023. The country's environment minister warned that 2024's figures may not be as promising as a significant rise in deforestation had already been recorded by July due to dry weather caused by El Niño, a weather phenomenon that warms the central Pacific. Illegal economies continue to drive deforestation in the Andean nation.

"It's impossible to overlook the threat posed by organised crime and the economies they control to Amazon conservation," said Bram Ebus, a consultant for Crisis Group in Latin America. "Illegal gold mining is expanding rapidly, driven by soaring global prices, and the revenues of illicit economies often surpass state budgets allocated to combat them."

In Brazil, swaths of the rainforest were draped in smoke in August from fires raging across the Amazon, Cerrado savannah, Pantanal wetland, and the state of São Paulo. Fires are traditionally used for deforestation and to manage pastures, and those human-made blazes were largely responsible for igniting the wildfires.

For a second year, the Amazon River fell to desperate lows, leading some countries to declare a state of emergency. In Brazil, one of the Amazon River's main tributaries dropped to its lowest level ever recorded.

It was the worst year for Amazon fires since 2005, according to nonprofit Rainforest Foundation U.S. Between January and October, 15.1 million hectares of Brazil's Amazon burned. Bolivia had a record number of fires in the first 10 months of the year.

FOUR UN ENVIRONMENTAL SUMMITS FELL SHORT IN 2024. WHAT HAPPENED?

The United Nations' efforts to address critical environmental challenges hit multiple roadblocks this year, with four key summits — in Colombia on biodiversity, Azerbaijan on climate, Saudi Arabia on land degradation, and South Korea on plastics — failing to deliver meaningful outcomes.

These meetings brought together governments, researchers, policymakers, industries, and civil society organisations to ensure their goals were aligned, build equitable accountability, and mobilise adequate finance for action. But all four summits achieved no or partial success on issues they had set to address. In fact, this is the fourth time UN discussions designed to push countries toward significant progress in addressing biodiversity loss, climate change, and plastic pollution have either ended without consensus or yielded unsatisfactory outcomes.

This is a significant setback in global efforts to address biodiversity loss and climate change, potentially leading to delayed action on critical issues such as climate finance, drought mitigation, and plastic pollution, with the most vulnerable countries potentially suffering the greatest impact.

The partial or full failures of these talks raise pressing concerns about the global community's ability to combat biodiversity loss, climate change, and other urgent environmental crises. Understanding the reasons behind these setbacks and their implications for global cooperation is essential to charting a more effective path forward.

Divergent national interests

At the heart of the talks' breakdown lies a stark and growing divergence in national priorities. Developing nations, grappling with developmental challenges, economic constraints, and the impacts of climate change, have repeatedly demanded more technology transfer and financial



support from developed countries. But developed nations are reluctant to commit additional resources, citing domestic political pressures and economic challenges of their own.

For example, the Colombia talks on biodiversity conservation faltered as countries failed to agree on financing mechanisms to support sustainable land-use practices. Financing conservation at scale came to a gridlock with countries lagging in ambition, being nowhere close to delivering the \$700 billion-a-year requirement. In Azerbaijan, developing nations demanded \$1.3 trillion a year from developed nations, and the talks ended with the latter loosely agreeing to raise the amount from a wide range of sources, including private investment.

Also in Azerbaijan, countries were divided over the pledge to transition away from fossil fuels, a decision made during the last UN climate summit. The plastic pollution talks in South Korea also brought to the fore a significant divide among participating nations. The meeting concluded without reaching an agreement primarily because countries that rely on economies dependent on ongoing demand for plastics opposed a legally binding treaty. Instead, they pushed for proper usage and recycling of plastic waste.

Consensus and crises

Several talks stumbled on disagreements over the frameworks needed to monitor and enforce environmental goals. In Azerbaijan, discussions on implementing the global stocktake under the Paris Agreement saw divisions over the accountability mechanisms for emission reductions, particularly for high-emission nations.

In Saudi Arabia, industrialised nations clashed with African countries over the establishment of a legally binding drought protocol. While the former wanted a broad operational framework, the African nations demanded a concrete plan with economic commitments.

Global crises, including the COVID-19 pandemic, economic instability, and geopolitical conflicts, have created significant challenges for environmental action. They have diverted attention and resources away from pressing environmental priorities as governments grapple with urgent domestic concerns such as public health, economic recovery, and social stability.

For many countries, particularly those with limited institutional and/or financial capacity, the challenge to balance economic recovery efforts with long-term sustainability goals has weakened their negotiating positions. This has further reduced their willingness or ability to commit to ambitious environmental targets.

Developing economies, in particular, face heightened difficulties as they navigate inflation, debt burdens, and overall developmental challenges alongside climate vulnerabilities, leading to calls for greater financial and technological support from wealthier nations.

Growing divide, lack of consensus

These setbacks in global negotiations complicate the already daunting task of addressing global environmental challenges.

Delayed action: The inability and failure to agree on frameworks and commit to concrete actions by nations postpone critical measures required to fight global issues such as biodiversity loss, climate change, land degradation, and plastic pollution. This delay increases the likelihood of pushing global systems closer to irreversible tipping points, with severe consequences for communities and economies worldwide.



Incoherent, fragmented efforts: As multilateral processes falter, there is a growing risk of countries turning to unilateral regional action. While these initiatives are well-meaning and can make progress, they would lack the global coherence necessary to address environmental issues comprehensively and equitably and could trigger new problems because of a lack of coordination among nations.

Erosion of trust: Repeated failures in negotiations risk undermining confidence among nations, making future cooperation even more difficult.

Pressure on future summits: The failure of multiple global negotiations on the environment further forces upcoming meetings to deliver meaningful outcomes.

Rebuilding momentum

To advance global environmental goals, several key strategies must be prioritised. Climate finance is key to this. Wealthier nations must honour their commitments to provide financial and technological support to developing nations. This would create a more equitable foundation for negotiations and help bridge trust gaps between developed and developing economies.

Equally critical is the need to enhance transparency and accountability by establishing robust mechanisms to track progress and hold nations accountable for their commitments. This would play a vital role in restoring confidence in multilateral processes.

Inclusive diplomacy is also essential to address geopolitical tensions and ensure all voices, particularly those of vulnerable nations, are heard in negotiations. By promoting equitable participation, global cooperation can become more effective and resilient.

Further, there must be a strong focus on implementation — shifting the emphasis from ambitious pledges to tangible action — backed by measurable outcomes. This pragmatic approach ensures progress even in the face of broader disagreements.

Finally, it is crucial to acknowledge and address connections between biodiversity loss, land degradation, plastic pollution, and climate change — a complex web of environmental crises that amplify one another. Climate change accelerates habitat destruction, ultimately leading to biodiversity loss, while degraded ecosystems such as deforested lands, desertification and land degradation or overexploited soils release carbon, exacerbating global warming.

Similarly, plastic pollution harms marine and terrestrial ecosystems and contributes to greenhouse gas emissions during its production and degradation. Addressing these issues in isolation has proven insufficient. Global environmental talks must therefore prioritise these interconnections, foster integrated strategies that protect ecosystems, restore degraded landscapes, and reduce pollution while tackling climate change.

The challenges are immense, but so are the stakes. As environmental crises intensify, the world can't afford further stalemates. It is imperative for nations to move beyond short-term interests and embrace a shared vision for a sustainable future.

MARINE HEATWAVE KILLED FOUR MILLION ALASKA SEABIRDS

The 2014-2016 Pacific marine heatwave wiped out more than half—roughly four million—of Alaska's common murre (*Uria aalge*) seabirds, representing the largest documented vertebrate die-off linked to warming oceans, according to a new study. "Although research on the impacts of

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global warming on marine birds has clearly suggested major shifts in species' ranges and abundance, documented changes have been gradual (years to decades). To our knowledge, this study is the first to show that climate impacts can be swift (one year) and intense (eliminating half of the population)," authors of a study write. "Seabird mortalities are often observed in association with heatwaves, but population impacts are not well understood." Marine heatwaves—intense, prolonged, and expansive ocean warming events—are becoming increasingly common due to climate change. They are profoundly reshaping marine ecosystems globally.

These heatwaves lead to mass mortality of key habitat-forming species like kelps and corals, triggering cascading trophic effects that alter ecosystem productivity, displace lower-trophic-level species, and amplify food shortages for top predators. Although many upper-trophic-level species suffer from reduced reproductive success, increased mortality, and even mass die-offs due to marine heatwaves, broader population impacts are poorly understood.

Analysing colony counts before that period (2008-14), and after (2016-22), the authors documented a 52-78% population decline across 13 murre colonies, equating to the loss of four million birds within the span of less than two years. According to them, this represents the largest documented wildlife mortality event in the modern era. Moreover, the findings reveal no evidence of population recovery since, suggesting potential long-term ecosystem shifts and an overall diminished capacity to support historical seabird populations. "Recent population abundance estimates since then have found no evidence of recovery, suggesting that the heatwave may have led to an ecosystem shift," the Editor's summary says. "We suggest that the pronounced decline of an abundant and widespread upper trophic predator to less than half of its former population size in Alaska may signal a new threshold of response to global warming," they write.

ENDOCRINE GLANDS: THE BODY'S TINY TITANS

When we worry about the health of our family and our friends, discussion often gravitates towards our hormones, the most talked about being insulin and the thyroid hormone. Hormones are signalling molecules found in most multicellular organisms. They facilitate communication between organs and tissues in our body that are far apart. The signals regulate a wide range of physiological and behavioural processes, such as growth and maturation, sleep, digestive functions, and stress responses.

Our school education has provided us with an understanding of the role of hormones in human physiology, with the respective endocrine glands that secrete hormones being described by their size and location in our bodies.

What is noticeable about these descriptions is how small these glands are. The adrenal glands, found atop each kidney, weigh 5-10 grams in adults. The pineal gland in the midline of the brain is the size and shape of a grain of rice and weighs 50-150 mg. The thyroid gland in the neck resembles a butterfly in shape and weighs about 25 grams.

Size versus function

One puzzle that has remained unaddressed is the huge differences in the size of the endocrine glands themselves. The thyroid gland may weigh no bigger than a ChapStick, but a pineal gland is a mere grain of rice. This question has been recently answered, for many of our body's hormones, in an analysis by the Alon group at the Weizmann Institute in Rehovot, Israel; the study was published in the journal *iScience*. They started with the number of cells in an endocrine gland that



secrete hormones. Thus, the parathyroid gland, four of which are found in the neck, each the size of a lentil seed (in Hindi-masur; Tamil, avarai) weighs 120 mg and has about 10 million cells that secrete the parathyroid hormone. On the other extreme, the adrenal cortex, at over 5 grams, is much larger and has 4.5 billion cells that secrete cortisol.

All cells that are the target of a hormone molecule have a receptor for that molecule on their surface. Cells bearing these receptors can be tagged and their numbers estimated in slices of tissue using microscopes. This study shows that the number of hormone-secreting cells are in proportion to the number of cells that are targeted. Every hormone producing cell has about 2,000 target cells.

The adrenal cortex is relatively large, as is the thyroid. Adrenaline binds to all cells in the body that have a nucleus. The thyroid hormones keep up metabolic balance throughout the body. The parathyroid hormone comes from a diminutive gland, and its targets include the kidney, the pancreas and some parts of the central nervous system.

Some hormones are secreted by organs that have other functions too. The pancreas, weighing 80-100 grams, has a major role in secreting digestive enzymes. Only 1-2% of cells in the pancreas produce insulin, which targets the liver and muscle cells.

Adjustments to hormonal levels by dietary and other health measures can have a large impact on our well-being. For example, intermittent fasting reduces circulating insulin concentrations because the absence of food intake diminishes the requirement for insulin secretion. Lowered insulin levels also result from high fibre-diets, regular exercise, sufficient sleep and low stress levels. Reduced insulin levels make the cells of our bodies become more efficient at taking up glucose from the blood. This helps prevent insulin resistance. The small size of these organs belies the influence that they have on our well-being.

OVER THE COUNTER, UNDER THE RADAR: CAN PARACETAMOL BECOME FATAL?

The death of a woman in a Liverpool hospital, reportedly from paracetamol poisoning, has brought the issue out of the shadows. She received a dose far in excess of the recommended dose for her body weight. The truth is, annually, paracetamol poisoning quietly claims thousands of lives worldwide. In the USA alone, it accounts for more than 60,000 emergency hospital visits annually and over 500 deaths. The estimates are limited by a lack of available data from many countries, particularly in Asia, South America, and Africa. Despite its scale, paracetamol poisoning rarely enters public discourse, overshadowed by its reputation as a “safe” drug.

Paracetamol is widely used for pain and fever reduction. In the US and Japan, it is called acetaminophen, while most other countries, including India, use the name “paracetamol.” How paracetamol works is not fully understood. It relieves pain by acting on the brain’s central nervous system by inhibiting the production of prostaglandins, which are chemical messengers that amplify pain. Paracetamol targets the hypothalamus, the brain’s heat-regulating centre for fever reduction.

Safety and risks

The maximum safe dose for an adult is up to 4 grams per day. For children, dosage depends on weight, with the safety threshold being 140 mg per kilogram of body weight. For example, a person weighing 70 kg should not exceed 10 grams in 24 hours. Exceeding these doses can result in severe abdominal pain due to impending liver failure. It has to be consumed in divided doses



,with the maximum dose for adults in the range of 650 mg at a time and for children, 15 mg/kg of body weight.

Dangers of Overdose

When taken in excess, paracetamol becomes toxic. When you take paracetamol as a syrup or tablet, it is absorbed in the small intestine and then enters the bloodstream. It then travels to the liver, where most of it is safely processed. About 60% and 35% are converted into a harmless form called paracetamol glucuronide and paracetamol sulfate, respectively. The remaining 5-10% is turned into a toxic substance called N-acetyl-p-benzoquinoneimine (NAPQI). Normally, the liver quickly neutralises NAPQI and removes it as paracetamol glutathione. In case of an overdose, the liver becomes overwhelmed, and NAPQI accumulates and damages liver cells, leading to liver cell death and liver failure. Paracetamol poisoning is insidious, and symptoms often appear after the damage has begun. As toxicity progresses, jaundice, confusion, and organ failure may follow.

Treatment

The antidote for paracetamol poisoning is N-acetylcysteine (NAC), which replenishes the body's glutathione reserves and neutralises NAPQI. NAC is most effective when administered within eight hours of the overdose but can still provide benefits up to 24 hours later.

INDIAN RESEARCHERS DEVELOP INJECTABLE HYDROGEL FOR TARGETED CANCER TREATMENT

Researchers from the Indian Institute of Technology-Guwahati (IIT-G) and the Bose Institute, Kolkata have developed an advanced injectable hydrogel for localised cancer treatment. A statement issued by the IIT-G said this hydrogel serves as a stable reservoir for anti-cancer drugs, releasing it in a controlled manner while sparing healthy cells from harm.

The findings of the research, expected to be revolutionary for breast cancer therapy, have been published in *Materials Horizons*, a journal of the Royal Society of Chemistry.

“Current treatments, such as chemotherapy and surgical interventions, often have severe limitations. Chemotherapy’s systemic delivery often results in harmful side effects by affecting both cancerous and healthy cells,” the researchers said in the statement.

Localised treatment

The team addressed these challenges by designing a hydrogel that delivers drugs precisely to the tumour site, ensuring localised action. Hydrogels are water-based, polymer networks capable of absorbing and retaining fluids. Their unique structure mimics living tissues, making them suitable for biomedical applications.

The hydrogel, composed of ultra-short peptides is designed to remain insoluble in biological fluids, ensuring it stays localised at the injection site. It responds to elevated levels of glutathione (GSH), a molecule abundant in tumour cells.