



CURRENT AFFAIRS for UPSC

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DreamIAS



INTERNATIONAL

KING CHARLES III TO VISIT AUSTRALIA AND SAMOA AS HE RECOVERS FROM CANCER

King Charles III is preparing to visit Australia and Samoa in October, an itinerary that will span 12 time zones and test the monarch's stamina as he recovers from cancer treatment.

The trip, announced on Sunday by Buckingham Palace, marks a watershed moment for the 75-year-old king, who has been slowly returning to public duties after taking a break following his cancer diagnosis in early February.

The decision to undertake such a long journey will be seen as a sign of Charles' recovery, even though the program in Australia will be "limited." The visit to Australia will be a critical moment for the king as he tries to shore up support for the monarchy at home and abroad.

The trip will mark the first time since he ascended the throne that Charles will visit one of the 14 countries outside the United Kingdom where the British monarch remains head of state, a link that is a source of pride for some but an unwelcome reminder of Britain's colonial dominance for others.

While he will undoubtedly be welcomed by fans waving the flag and singing "God Save the King," Charles is also likely to hear anti-monarchy voices in a country where 45% of voters in a 1999 referendum supported creating an Australian republic.

Prime Minister Anthony Albanese's Labour Party supports ditching the monarchy, but the government says it isn't a priority and there is "no timeline" for another referendum.

"It's clear that there's a real re-evaluation going on there as to whether the Commonwealth, and certainly the realms, want to retain their connection to the British monarchy or not," Ed Owens, a historian and author of "After Elizabeth: Can the Monarchy Save Itself?" told The Associated Press in an interview before the trip was announced. "So, you know, there are troubled waters ahead."

The palace provided few details of the tour. Charles and Queen Camilla will visit the Australian Capital Territory and New South Wales as well as making a more formal state visit to Samoa, where the king will appear at the Commonwealth Heads of Government Meeting, the palace said.

The capital territory is home to Canberra, Australia's national capital. Sydney, Australia's largest city, is in New South Wales.

Charles holds the symbolic title of head of the Commonwealth, a voluntary association of 56 independent nations, most of which have historic ties to Britain. The annual heads of government meeting will be held October. 21-25.

However, the trip will not include a stop in New Zealand. "The King's doctors have advised that a further extension to Their Majesties' trip should be avoided at this time, to prioritize His Majesty's continued recovery," the palace said in a statement.

THE FADING ALLURE OF MEDIA ENDORSEMENTS

Last month, the editorial board of The New York Times endorsed Democratic presidential nominee, Kamala Harris, keeping with the tradition of media endorsements of political candidates



that began, for that newspaper, in 1896. The endorsement was unequivocal, reflecting the view of The Times that there was absolute clarity about “the only patriotic choice for president.”

On the one hand, it is hard to disagree with the assessment of the newspaper of record that Ms. Harris’s Republican rival, Donald Trump, has degraded the quality of American democracy by challenging the 2020 election result and playing a role in the 2021 insurrection against the Capitol in Washington, DC; undermined federal institutions by attempting to subvert them; damaged the U.S.’s standing on the global stage through his reckless approach to foreign policy; and represents a flawed leader who has racked up not just two Congressional impeachments but faces numerous civil and criminal charges linked to actions during his time in the White House. The newspaper, which has not endorsed a Republican presidential candidate since 1956, also levelled fair criticism at Ms. Harris for not sharing more details about her policy plans and proposed agenda for the U.S., as well as engaging in more unscripted encounters in which she might have explained her vision with more clarity.

Yet, in the context of the tectonic changes that have swept across the media space and the ever-broader spectrum of communication options for political messaging, it is pertinent to ask whether newspaper endorsements such as these make any difference on the ground. Even if they do matter to some cohort of voters, should media houses be engaging in what is essentially a form of political activism in the current climate of bitter polarisation in U.S. society, where many voters distrust media opinions, or have already made up their minds on political issues, candidates, and parties?

These questions are gaining greater salience with each election cycle. While it will continue to endorse presidential candidates, The Times had earlier announced that it will no longer endorse candidates in Senate, congressional, and state legislative contests. In doing so, the newspaper joins peers such as the Miami Herald, the Chicago Tribune, the New York Daily News, and The Denver Post, which are moving away from the tradition of endorsement, seen in some quarters as archaic.

The media endorsement that stood out most during my tenure as U.S. correspondent of this newspaper was of Democratic nominee Hillary Clinton by more than 50 publications in the run-up to the 2016 elections. While five media houses backed the “none of the above” option, only two endorsed Mr. Trump, who eventually went on to win the election.

Yet, the remarkable transformation of the media landscape for election campaigns had begun much earlier, with the 2008 presidential run of Barack Obama, then a young Senator from Illinois, which demonstrated the sheer power of fundraising through social media platforms. His unprecedented social media strategy for electioneering by effectively bypassing the mainstream media, rendering it toothless in candidates’ race for political credentials, permanently altered the play book for both Democrats and Republicans in the succeeding decades.

Although the perceived value of social media platforms as election campaign tools was partially dented by the Cambridge Analytica crisis of Facebook and the disconcerting user privacy questions that it raised, and the impact of AI-related challenges including the rise of Deepfakes, it offers other avenues for popular outreach, including through celebrities. Little wonder then that the Harris campaign appeared to celebrate its endorsement by singer Taylor Swift far more than it did any newspaper endorsement.



DEEPER ROLE

The Biden administration's decision to send an advanced anti-missile system to Israel, and soldiers to operate it, is the latest sign that the U.S. is getting drawn into the unfolding conflict in West Asia. Ever since the latest war here broke out, after Hamas's October 7 attack on Israel, the U.S. had publicly maintained that it did not want a regional war. The U.S. President adopted a twin approach — to give Israel a free hand in its war on Gaza, while spending America's diplomatic and military resources to prevent an escalation. When Israel carried out a disastrous, disproportionate war on Gaza, facing allegations of genocide, Mr. Biden sent Secretary of State Antony J. Blinken several times to the region to keep the American coalition intact. The U.S. launched an airstrike campaign against Yemen's Houthis — who "declared war against Israel" and attacked commercial vessels in the Red Sea — and also strikes against Hashad al-Shabi, the Shia militias in Iraq and Syria, while Secretary Blinken held the American-Arab alliance together. But what Mr. Biden did not do was to put meaningful pressure on Israel, which is now accused by a UN investigation of having committed war crimes and crimes against humanity in Gaza. The Brown University's Costs of War project says that the Biden administration has sent \$17.9 billion in military assistance to Israel since October 2023. Washington did little when Israel took the war to Iran by bombing the Iranian embassy in Damascus or when it launched the Lebanon invasion.

The U.S. decision to deploy the Terminal High Altitude Area Defense (THAAD) system also points to the precarious security situation its ally is in. After 12 months of war, Israel is yet to meet its objectives. Hamas still fires rockets into Israel. Hezbollah has stepped up rocket and drone attacks after Israel's Lebanon invasion. On Sunday, a Hezbollah drone struck an Israeli military base, killing four soldiers. On October 1, Iran launched a massive ballistic missile attack on Israel. While most of the 200 Iranian missiles were intercepted by Israeli and American systems, dozens hit at least two Israeli air bases. With Israel preparing its response to Iran amid Iranian threats of a counter-retaliation, the U.S. finds it necessary to bolster the defences of its ally. The move also underscores the argument that Israel is overwhelmingly dependent on the U.S. for security and defence, which gives Washington substantial leverage over Tel Aviv. For some strange reasons, the Biden administration has, until now, refused to use that leverage as Israel has gone rogue in Gaza, West Bank, Syria and Lebanon. This escalation cycle could drag the U.S. deeper into the conflict, with disastrous consequences for all parties, unless Washington reins in its closest ally.

UN INQUIRY ACCUSES ISRAEL OF WAR CRIMES OVER GAZA ATTACKS

A UN inquiry said it found that Israel carried out a concerted policy of destroying Gaza's healthcare system in the Gaza war, actions amounting to both war crimes and the crime against humanity of extermination.

A statement on Thursday by former UN High Commissioner for Human Rights Navi Pillay that accompanied the report accused Israel of "relentless and deliberate attacks on medical personnel and facilities" in the war, triggered by Hamas's deadly cross-border attack on southern Israel on October 7, 2023. "Children in particular have borne the brunt of these attacks, suffering both directly and indirectly from the collapse of the health system," said Ms. Pillay, whose 24-page report covering the first 10 months of the war will be presented to the UN General Assembly on October 30.

Israel's diplomatic mission in Geneva rejected the report's findings, calling them outrageous.



“(The report) is another blatant attempt by the CoI to delegitimise the very existence of the State of Israel and obstruct its right to protect its population,” it said, referring to the Commission of Inquiry.

The UN inquiry’s statement also accused Israeli forces of deliberately killing and torturing medical personnel, targeting medical vehicles and restricting permits for patients to leave the besieged Gaza Strip.

The Palestinian Health Ministry says nearly 1,000 medics have been killed in Gaza in the past year in what the WHO called “an irreplaceable loss”.

ISRAEL VERSUS THE UN

India’s decision not to associate itself with a letter at the United Nations that supported UN Secretary-General António Guterres and criticised Israel’s decision to ban him from the country, is both puzzling and a cause for concern. The letter, circulated by Chile more than a week ago, reposed faith in the UN and its top officials, after the Israeli Foreign Minister accused them of bias and said Mr. Guterres did not “deserve to step foot on Israeli soil”. While the world has watched for more than a year, Tel Aviv has sought reprisal for the October 7, 2023 terror attacks by Hamas, with its devastation of Gaza. That hunt for its enemies has taken Israel across international borders, with strikes on Lebanon and Yemen and covert operations such as the bombing of the Iranian embassy in Damascus, the killing of a Hamas leader in Tehran, and using pager bombs to target Hezbollah in Lebanon. However, what has stood out in the past year is its assault on the UN system: Israel has deliberately targeted the UNRWA, an organisation India supports, accusing the UN agency of Hamas links. At the UN General Assembly, Israel’s Prime Minister Netanyahu referred to the body as an “anti-semitic” swamp. Most recently, Israeli forces launched attacks on the UN peacekeeping force in Lebanon, UNIFIL, where 903 Indian soldiers are deployed as a part of a 50-nation, 10,000 strong force. The ban on Mr. Guterres followed Iran’s October 1 missile attacks on Israel, and Israeli Foreign Minister Israel Katz accusing Mr. Guterres of not condemning them “unequivocally”. As a result, the letter, signed by 104 nations and the African Union, as well as another letter by 34 UN peacekeeping nations (that India was not a part of, but later “aligned” itself with), are being seen as signs of the unease in the Global South and in Europe with Israel’s attacks on the world body mandated to resolve conflict issues.

Given the situation, and the risk to Indian soldiers, it is disappointing that New Delhi has kept itself at arm’s length from statements that were critical of Israeli actions against the UN. Even when clarifying its position on Thursday, the Ministry of External Affairs chose to stay safe, expressing no criticism of Israeli action against the UN. India is a leading member of the UN system and has made generous contributions to it since its inception. It has also been a beneficiary of the services and the platform it provides. Respect from all member-states for the UN Secretary-General’s office is part of the UN charter (Article 100 (2)). Given India’s close bilateral ties with Israel, some in the government might see the abstention from comment as an exercise of ‘realpolitik’ restraint. When it comes to the importance of the UN-based international rule of law and global order, however, there can be no half-measures.

THE RISE AND DEATH OF YAHYA SINWAR

After Hamas’s October 7, 2023 attack in Israel, in which about 1,200 people were killed, the Israeli Defence Forces (IDF) called Yahya Sinwar, the leader of the Islamist militant group in Gaza and a key architect of the attack, “a dead man walking”. On October 17, 2024, a year after the war in

4TH FLOOR SHATABDI TOWER, SAKCHI, JAMSHEDPUR



which over 42,000 Palestinians, a vast majority of them women and children, were killed, the IDF announced that it has killed Sinwar in an operation in Gaza's Rafah. For over a year, Sinwar was Israel's most wanted man. Israel and its allies in the West have hailed his killing. But for Hamas, he was a "hero who ascended as a heroic martyr".

How did Sinwar, who was born in a refugee camp in Khan Younis in southern Gaza in 1962, become Hamas's most powerful leader and Israel's most detested enemy? His story was intertwined with that of many Palestinians, who grew up under occupation and turned to radicalism for resistance and perished in wars, after spilling the blood of many.

Sinwar's parents were from Al-Majdal, a town north of Gaza which is today known as Ashkelon in Israel proper. His parents were forced out of their homes in 1948, when the state of Israel was created. Some 7,00,000 Palestinians were made refugees between 1948 and 1949.

Early days

Sinwar became active in the Muslim Brotherhood in the 1980s and was first arrested by Israel in 1982, when he was 19 years old. When Hamas was founded in 1987, Sinwar established the group's internal security organisation, al-Majd, which was accused of targeting several Palestinians "for collaborating" with Israel. In 1988, he was arrested by the Israelis, convicted for the murder of 12 Palestinians and sentenced for four life sentences. He spent 22 years in jail.

A fluent Hebrew speaker, Sinwar was driven by his deep antipathy towards the Israeli occupation of Palestine and deep commitment to the Islamist ideology of Hamas. The Israeli prison for him was a learning "academy".

Sinwar was released in 2011 as part of a prisoner swap deal. By that time, Hamas was already in power in Gaza, and Ismail Haniyeh was its leader. As a former internal security chief who spent two decades in Israeli prisons, Sinwar already enjoyed a cult status among Hamas's top ranks. He rose quickly within the militant group.

In 2017, when Haniyeh became the head of Hamas's Polit Bureau. Sinwar was chosen as the group's leader in Gaza. A year later, in an interview, Sinwar said his life as the administrator of Gaza, which had been under Israeli blockade since 2007, was not any different from the time he spent in Israeli jails. "I have only changed prisons. And, despite it all, the old one was much better than this one. I had water, electricity. I had so many books," he said.

In the following years, Sinwar would see the Palestinian issue being pushed to a corner of West Asia. There were no peace talks. The settler political class in Israel started pushing for the annexation of the West Bank settlements. Four Arab countries, including the UAE, would normalise ties with Israel in 2020 in an agreement brokered by the U.S. Saudi Arabia was in an advanced stage of recognising the state of Israel. Hamas and its cause were being sidelined in a changing region.

Sinwar's response to those changes was to launch a murderous attack inside Israel. The attack was an immediate success from his point of view — his forces took the Israelis by surprise. The famed Israeli intelligence agencies failed to foresee Sinwar's move. The political leadership was stunned. But Sinwar perhaps miscalculated the Israeli response.



Vengeful war

A vast majority of the victims of Hamas's attack were Israeli civilians, which shook the country. The brutality of the attack further isolated Hamas, while Israel consolidated support among its allies, including the U.S. Prime Minister Benjamin Netanyahu launched a vengeful war on the Palestinians in Gaza, destroying much of the enclave.

Over the past year, Israel has killed several of its enemies. Mohammed Deif, Hamas's military wing chief, was killed on July 13. Ismail Haniyeh was killed on July 31 in Tehran. Hassan Nasrallah, the leader of Hezbollah, was killed in a Beirut bombing on September 27. And now, Sinwar was also killed. These are tactical victories for Israel. But what is to be seen is whether these killings would provide Israel the long-term security it is pursuing or whether the wounds of the wars Israel is fighting would continue to trap the Jewish state in cycles of violence.

WHAT IS THAAD, WHICH US IS SENDING TO ISRAEL; WHY THIS IS SIGNIFICANT

US to send THAAD defence battery system to Israel: Even as Israel faces increasing criticism for targeting UN peacekeepers in Lebanon, the US, underlining its "ironclad commitment to the defence of Israel", has announced it will send its advanced missile defence system THAAD, along with troops to operate it, to the West Asian nation.

THAAD stands for Terminal High-Altitude Area Defence, and the battery is used to intercept and destroy enemy missiles.

What is THAAD?

A THAAD battery consists of 95 soldiers, six truck-mounted launchers, 48 interceptors (eight per launcher), radar surveillance and radar, and a tactical fire component, according to a paper by the US Congressional Research Service.

THAAD provides a "rapidly deployable capability against short-range (up to 1,000 km), medium-range (1,000–3,000 km), and limited intermediate-range (3,000–5,000 km) ballistic missile threats inside or outside the atmosphere during their final (terminal) phase of flight," the paper says.

Employing "hit-to-kill" technology to destroy threat missiles, the THAAD can defend a larger area than the older Patriot Air and Missile Defense System. It has been developed by Lockheed Martin Corporation.

Why is THAAD being sent to Israel significant?

According to the US defence department press release, the latest decision is "part of the broader adjustments the US military has made in recent months, to support the defense of Israel and protect Americans from attacks by Iran and Iranian-aligned militias."

In effect, this means that a highly advanced American defence system, along with an "associated crew of US military personnel" will be directly stationed in Israel, at a time when the situation in West Asia is already highly tense.

The THAAD being stationed in Israel, however, is a more significant step. Notably, Ukraine has been requesting a THAAD battery for a long time to defend itself against Russia, but has been refused.



THAAD is not only very expensive to use, it requires trained US personnel to operate it. According to an article in European Security and Defence, “While the export model of PATRIOT is estimated to cost nearly USD 1 billion, THAAD’s price tag for a single battery is estimated at approximately USD 2.5 billion.”

Israel already has an advanced, multi-tiered air defence system, and the THAAD significantly bolsters it. Iran does have one advantage, however — it spends much less on firing missiles than Israel and the US do on intercepting them.

WHAT ARE ‘DRAGON DRONES’, THE LATEST WEAPON BEING USED IN RUSSIA-UKRAINE WAR?

A deadly new weapon has taken to the skies in the Russia-Ukraine war. Both sides have posted visuals of drones appearing to rain down fire — earning this weapon the moniker of “dragon drone”.

What these drones are spewing, however, is a molten metal that burns at 2,427 degrees Celsius.

What are ‘dragon drones’?

Dragon drones essentially release a substance called thermite — a mixture of aluminium and iron oxide — developed a century ago to weld railroad tracks.

When ignited (usually with the help of an electrical fuse), thermite triggers a self-sustaining reaction that is quite difficult to extinguish. It can burn through almost anything, from clothes to trees to military-grade vehicles, and can even burn underwater. On humans, it causes severe, possibly fatal, burns and bone damage.

“Combining thermite with high-precision drones that can bypass traditional defences makes dragon drones ‘highly effective’ and ‘dangerous,’” Al Jazeera quoted the United Kingdom-based anti-war advocacy organisation Action on Armed Violence (AOAV) as saying.

Dragon drones are believed to have been first deployed in the Russia-Ukraine war around September. According to a report by The New York Times, Ukrainian forces used them to “ignite the vegetation that Russian troops use for cover and burn it out, exposing them and their equipment to direct attack.” Soon, the Russians too began to produce and deploy their dragon drones.

Has thermite been used in weapons before?

Yes. Thermite was used in both world wars. During World War I, German zeppelins dropped thermite-laden bombs which were considered an innovation at the time.

By World War II, thermite-laden high incendiary explosives became a part and parcel of both the Allies and Axis forces’ aerial bombing campaigns. According to some estimates, the Allies dropped some 30 million 4-pound thermite bombs on Germany and another 10 million on Japan during World War II. Thermite hand grenades were also used during the war to disable artillery pieces, without an explosion.

In modern conflict, thermite is most often used by espionage agents, or special operations teams due to its ability to burn intensely but without a bang.



Is it legal to use thermite in weapons?

The use of thermite in war is not prohibited under international law. However, the use of such incendiary weapons against civilian targets is barred under the Convention on Certain Conventional Weapons — Cold War-era guidance issued under the auspices of the United Nations.

“The problem with thermite is that it is rather indiscriminate,” Marina Miron, a military expert from King’s College London, told DW. “Therefore, while it is not banned per se, Protocol III of the Convention on Certain Conventional Weapons actually limits its use to strictly military targets, given the fact that this munition can produce severe burns and respiratory injuries.”

WAR TURNS UKRAINE’S FORESTS INTO A HELLSCAPE

Russia’s war against Ukraine has brutalised the latter’s landscape and much of its 100,000 sq. km. of forest. Both Russian and Ukrainian armies blast thousands of shells at each other every day, shredding the earth in grinding combat that echoes the trench warfare of World War One.

The conflict has innovated in destruction, too. Two videos posted in September by a unit from Ukraine’s 108th Territorial Defence brigade showed a small drone trying to flush out Russian troops by spraying a glowing, red-hot substance onto a long line of trees and setting them alight.

The director of the Sviati Hory national park, Serhiy Pryimachuk, said Russian munitions had burnt vast tracts of the area, once a rare and beloved beauty spot in a heavily industrialised region.

Tending to forests is now a perilous occupation, with mines and unexploded shells hidden in the ground posing the biggest threat.

In northern Ukraine’s Chernobyl nature reserve, the pre-war population of over 100 Przewalski’s horses — a globally endangered species of wild horse — has been hit hard by the conflict, according to Oleh Lystopad, an ecologist with an advocacy group who said landmines were making it difficult to extinguish fires.

Protecting the environment isn’t the highest priority for a country fighting to repel an invading army in a conflict that has claimed tens of thousands of lives. The damage to forests is nonetheless part of a broader trail of environmental destruction caused by the war, which could leave a bleak natural legacy for decades to come, having poisoned the earth and rivers, polluted the air, and left vast tracts of the country riddled with mines, according to experts.

The conflict has compounded destruction of Ukrainian forestland by longstanding factors such as illegal logging. Aerial bombardment has sparked large fires, while some forests near the frontline have been shelled so intensively that they have been reduced to a field of stumps.

The dense pine forests common to eastern Ukraine catch alight easily and have been decimated by the conflict, said Brian Milakovsky, a U.S.-based forester who until recently lived and worked in Ukraine for eight years.

Milakovsky said the environmental crisis was particularly acute in Russian-held areas — nearly a fifth of Ukraine — where occupation authorities appeared to have little capacity to extinguish forest fires. He estimated that about 80% of the pine forests in the eastern region of Luhansk had been destroyed.



About 425,000 hectares of forest across the country have been found to be contaminated by mines and unexploded ordnance, an area half the size of Cyprus, according to the environment ministry.

The current official estimate is that demining all contaminated territory, including forests and other areas such as agricultural land, would take 70 years. Four ecologists with expertise in Ukrainian forests said the subsequent process of regenerating damaged areas would be complex and could take more decades, plus require billions of dollars in investment.

NORTH KOREA BLOWS UP ROAD, RAIL LINES NEAR BORDER, SOUTH FIRES WARNING SHOTS

- South Korea said North Korea blew up the northern parts of inter-Korean roads no longer in use on Tuesday, as the rivals are locked in rising animosities over North Korea's claim that South Korea flew drones over its capital, Pyongyang.
- On Tuesday, North Korea detonated explosives on key road and railway links connecting its territory to South Korea. Parts of the Gyeongui line on the West coast and Donghae line on the East coast were destroyed around noon, according to South Korea's Joint Chiefs of Staff (JCS). This move comes after Pyongyang warned it would sever its links with the South amid rising tensions between the two nations.

For Your Information-

- Recently, South Korea announced that it has detected preparations by North Korea to demolish parts of inter-Korean roads, signalling further deterioration of relations between the two countries.
- On 15th Oct 2024, North Korea detonated explosives on key road and railway links connecting its territory to South Korea. Parts of the Gyeongui line on the West coast and Donghae line on the East coast were destroyed around noon, according to South Korea's Joint Chiefs of Staff (JCS).
- The explosions followed recent accusations from North Korea that South Korea had been flying propaganda-laden drones over Pyongyang. Pyongyang also expressed frustration over ongoing joint military exercises between South Korea and the US, calling them provocations. Earlier this month, North Korean leader Kim Jong Un scrapped his policy of seeking peaceful reunification with the South, describing the relationship as one between "two hostile nations."
- During the period of inter-Korean détente in the 2000s, the two Koreas reopened two roadways and two railway lines across their heavily fortified border. However, their use was gradually halted as tensions over North Korea's nuclear program and other issues escalated.

Do You Know-

- According to the NCERT textbook, the Japanese colonial rule ended after 35 years in August 1945 with Japan's defeat in the World War II. However, it was the continued efforts of independence activists both inside and outside Korea that ensured Korea's independence after Japan's defeat. Following liberation, the Korean Peninsula was temporarily divided along the 38th parallel with the Soviets managing the North and the U.N. managing the South even as the nations worked to disband the Japanese forces in the region. However, this division became permanent as separate governments were established in both the North and the South in 1948.



• In June 1950, the Korean War broke out. With South Korea receiving support from the US-led United Nations forces and North Korea receiving support from communist China, it developed into a vintage proxy war of the Cold War era. In July 1953, after three years, the war ended in an armistice agreement. Korea remained divided. The Korean War had caused not only massive losses of life and property, but also a delay in free-market economic development and democratisation. Prices suddenly rose due to inflation caused by increased national expenses and currency issued during the war. Furthermore, industrial facilities constructed during the colonial period had been destroyed entirely. As a result, South Korea was forced to rely on the economic assistance being provided by the USA.

Trivia

- The most significant legacy of the Korean War is the division of the Korean Peninsula because of the continued armistice. It has had far-reaching implications for regional security, contributing to the militarisation of the Korean Peninsula and ongoing tensions between the two Koreas and between North Korea and the West.
- It also solidified the alliance between the United States and South Korea. The US established a lasting military presence in South Korea by stationing American troops and remains committed to defending it against any external aggression. It also provided economic support that has been a cornerstone of South Korea's economic development.
- China's entry into the war demonstrated its commitment to supporting communist regimes and a willingness to confront US-led forces in the region. China and North Korea largely maintain a close strategic partnership, with China being a key economic and diplomatic ally of North Korea. China's support for North Korea in the UN and its role in providing economic assistance despite international sanctions highlights the enduring nature of their relationship.

U.S., PHILIPPINES LAUNCH WAR GAMES AFTER CHINA'S TAIWAN MILITARY DRILLS, SHIP COLLISION

Thousands of U.S. and Filipino troops launched joint exercises in the northern and western Philippines on Tuesday, after China held huge drills around Taiwan and a Chinese vessel collided with a Filipino patrol boat.

The annual Kamandag, or Venom, exercises are focussed on defending the north coast of the Philippines' main island of Luzon, which lies about 800 km from self-ruled Taiwan.

Beijing considers Taiwan part of its territory and has vowed it will never rule out using force to take it.

The western Philippine island of Palawan, facing the South China Sea, will also host part of the drills.

The U.S. and Philippines are fielding just over a thousand participants each, while smaller numbers of Australian, British, Japanese and South Korean forces are also taking part.



NATION

CANADIAN FROSTBITE

After a year of frosty exchanges and declining relations, India and Canada have declared diplomatic war, as India's Ministry of External Affairs (MEA) revealed this week that the Canadian government had sought to investigate and even interrogate the Indian High Commissioner and five other diplomats, naming them "persons of interest" for the killing of Khalistani activist Hardeep Singh Nijjar. Mr. Nijjar, who was shot dead in June 2023 in British Columbia, was wanted by India. In a press conference, the Canadian police (RCMP) detailed their suspicions that the Indian diplomats were somehow involved with an Indian criminal network they believe is responsible for the killing, as well in the targeting of some in the Indian diaspora. The Canadian Ministry of Foreign Affairs has alleged political interference by India's diplomats, something hitherto it had accused China of. India's MEA has called the charges "preposterous", accusing Canadian Prime Minister Justin Trudeau of orchestrating the investigations for political gain with a pro-separatist Khalistani votebank, given his record-low ratings ahead of the 2025 general election. India also accused what it called the Canadian "regime" for providing space to "violent extremists and terrorists to ... intimidate Indian diplomats and community leaders...", in the name of free speech. Delhi and Ottawa have each expelled six diplomats. With the reduced staff strength in the High Commissions in both capitals and an outraged India reserving the right to further action, it could well mean drastic cuts in visas and curtailed direct travel links.

With the die cast for worsening ties, New Delhi must consider carefully the impact of its next steps not only on Indian diplomacy but also India's image. While it is imperative to defend India's diplomats, it is equally important to investigate the allegations that Indian intelligence agencies have overstepped in operations in the case. The RCMP's naming of Indian underworld gangster Lawrence Bishnoi must also be investigated. As India's adversaries seek to draw links between allegations against Indian intelligence and national security operations in Pakistan, the UAE, Qatar, Canada and the U.S., even India's close partners are looking askance. The U.S.'s statement, that India should cooperate with Canada, must be seen as evidence of that. India's dual policy towards the Nijjar case, which it outrightly rejects any connection to, and the Pannun case in the U.S. — it has sent a high-level inquiry team — also raises questions. The government must prove it has nothing to hide. It must also be more transparent about how it expects to deal with this challenge, and to reports that link Canada's allegations to India's top leadership including National Security Adviser Ajit Doval and Home Minister Amit Shah. Above all, New Delhi must step up an international campaign to ensure accountability from Canada: to either present verifiable evidence, or to stop casting this shadow over India's reputation and its diplomats.

FAILING U.K. UNIVERSITIES RELY ON INDIAN STUDENT FEES TO CUT DEFICIT

Last academic year, about one third of the universities in the U.K. ran deficits. A major reason behind the financial crisis is that there is a fee cap for local students, which has barely increased in the last decade. Thus, the colleges are forced to increasingly rely on fees paid by foreign students, which have no cap.

Students from India form the largest share of such foreigners. The fees they pay helps subsidise the education of the local students in the U.K. This arrangement is acceptable as long as it is mutually beneficial for foreign students, that is, if foreign students secure well-paying jobs in the U.K. and are able to repay their loans. However, data show that many Indians are getting



admission in lower-ranked universities. Last year, the then U.K. Prime Minister, Rishi Sunak, declared a crackdown on “low-quality” courses that “failed to deliver good outcomes” and limited student intake. Data show the effect of such courses on Indian students: the visas of a significant share of the students expire after they finish their course, which forces them to exit the U.K. instead of landing a job.

EXPRESS VIEW ON INDIA AT ASEAN: TURNING TO THE EAST

The annual meetings of the Association of Southeast Asian Nations (ASEAN), including partner countries like India, as well as the East Asia Summit, took place last week in Laos. These discussions occurred amid escalating conflicts in Europe and the Middle East and rising military tensions in Asia. Prime Minister Narendra Modi, attending his 11th consecutive session at the ASEAN-driven summits, reaffirmed India’s call for military restraint and political reason, reminding world leaders that solutions to global challenges cannot be found on the battlefield. Modi’s visit also marked two significant milestones: The 30th anniversary of India’s “Look East” policy (1994) and the 10th anniversary of his refined “Act East” policy (2014). The context in Asia today, however, is vastly different. In the late 1990s, a sense of great power cooperation and the rise of economic globalisation created favourable conditions for regional institution-building and economic integration under ASEAN’s leadership. This environment also allowed for India’s reintegration with the region.

Today, however, great powers are increasingly at odds, and their rivalry is slowing — if not reversing — the trends toward globalisation. China’s regional assertiveness, especially regarding maritime disputes in the South China Sea, has left ASEAN struggling to manage Beijing’s growing military dominance. The region’s fear of China has made it hesitant to fully capitalise on the US’s determination to counter Beijing. Meanwhile, economic de-globalisation is posing new challenges for ASEAN, which has long benefited from US-China commercial cooperation. Compounding these external pressures, ASEAN faces significant internal challenges. The ongoing breakdown of internal order in Myanmar and its military junta’s refusal to engage in constructive dialogue have put the organisation in a difficult position.

Where does this leave India in relation to ASEAN?

Delhi’s relative standing in the region has risen thanks to its sustained economic growth and growing military capabilities. India’s active membership of the Quad, with Australia, Japan and the US, has given a new edge to India’s regional role. Delhi kept a low profile on regional security issues in the past but is now taking a more affirmative position. PM Modi was unambiguous in opposing China’s expansionism and underlining the importance of Beijing abiding by the rules of the Law of the Sea in managing and resolving maritime disputes in the South China Sea. Over the last decade, India has also expanded bilateral military cooperation with several countries, most notably the Philippines. India’s trade policy with ASEAN, however, remains problematic — although trade has doubled over the last decade to \$130 billion, the trade deficit with the region is mounting and now stands at about \$44 billion. ASEAN’s economic size (\$4 trillion) stands slightly larger than India’s (\$3.7 trillion) and its prospects for growth and technological innovation are impressive. Outlining a strategy that focuses on removing internal obstacles and shedding old mindsets against regional trade is critical for an effective long-term Indian role in East Asia.



For Your Information-

- On 8 August 1967, five leaders – the Foreign Ministers of Indonesia, Malaysia, the Philippines, Singapore and Thailand – came together in Bangkok, according to the website of ASEAN. Thailand was brokering some disputes among Malaysia, Indonesia and the Philippines, and it eventually led to the signing of a document. “The five Foreign Ministers who signed it – Adam Malik of Indonesia, Narciso R. Ramos of the Philippines, Tun Abdul Razak of Malaysia, S. Rajaratnam of Singapore, and Thanat Khoman of Thailand – would subsequently be hailed as the Founding Fathers of probably the most successful inter-governmental organisation in the developing world today. And the document that they signed would be known as the ASEAN Declaration.
- The ASEAN Declaration signed by the five leaders conveyed the aspiration to further regional cooperation. These were about cooperation in the economic, social, cultural, technical, educational and other fields, and in the promotion of regional peace and stability and adherence to the principles of the United Nations Charter. It stipulated that the Association would be open for participation by all States in the Southeast Asian region subscribing to its aims, principles and purposes.
- Its major pillars that help lay out a blueprint for cooperation are Political-Security Community (APSC), Economic Community (AEC) and Socio-Cultural Community (ASCC).
- ASEAN is central to India’s Act East policy, which focuses on the extended neighbourhood in the Asia-Pacific region. The policy was originally conceived as an economic initiative but has gained political, strategic and cultural dimensions including the establishment of institutional mechanisms for dialogue and cooperation. India is part of the ASEAN Plus Six grouping, which includes China, Japan, South Korea, New Zealand and Australia as well.
- In 2010, a Free Trade Agreement was also signed and entered into force between India and ASEAN. While India was part of negotiations to join the Regional Comprehensive Economic Partnership (RCEP) in 2020, it ultimately decided not to do so. However, in the past eight years, trade has grown in terms of value, barring the pandemic years of 2020 and 2021.

Do You Know-

- The India-ASEAN trade deal was signed in 2009 during the UPA era and has become an important source of input materials for Indian industry. While palm oil and natural gas are sourced from Indonesia and Malaysia, items like natural rubber come from Thailand.
- Indian industry has begun calling for anti-subsidy measures against industrial imports from ASEAN, on the grounds that Chinese products are being rerouted through the region to claim benefits under the India-ASEAN trade deal. Moreover, the trade deficit between the two regions is rapidly rising, especially after the pandemic.
- Beginning in 2005, 16 participating countries comprised EAS grouping, with their first meeting in Kuala Lumpur, Malaysia. These members were the 10 ASEAN countries, Australia, China, India, Japan, New Zealand, and the Republic of Korea. ASEAN’s 10 member countries are Brunei, Cambodia, Indonesia, Laos, Malaysia, Myanmar, the Philippines, Singapore, Thailand, and Vietnam. The United States and the Russian Federation joined at the 6th East Asia Summit in 2011. Simply, the EAS is an ASEAN initiative and refers to the annual Meeting of Heads of States/Governments of these countries, where they are able to discuss common concerns and interests.



- Its creation was based on the idea of enhancing cooperation among East Asian countries and those in the neighbouring regions. Six priority areas of cooperation were identified – environment and energy, education, finance, global health issues and pandemic diseases, natural disaster management, and ASEAN Connectivity.
- In the past, the issues of claims over the South China Sea, the United Nations Convention on the Law Of the Sea, terrorism, the actions of North Korea and the conflict situation in Myanmar have been discussed by the countries.

EXPRESS VIEW ON INDIA-PAKISTAN TALKS AT SCO: TWO CHEERS FOR DIPLOMACY

External Affairs Minister S Jaishankar's visit to Pakistan this week, the first in nearly a decade, has produced a small but unexpected step towards a long overdue thaw in bilateral relations. Small, because there will be obstacles to overcome before even a limited engagement is put in place in an accident-prone relationship.

Unexpected, because both sides had downplayed the prospect for a bilateral dialogue on the margins of a meeting of the Shanghai Cooperation Organisation in Islamabad. It was probably a deliberate attempt at reducing the high expectations that accompany any encounter between Indian and Pakistani leaders. There were signals that an effort was on to unfreeze the relationship.

In Delhi, Jaishankar had signalled that India was willing to respond positively to any productive changes in Pakistan's approach. After all, it was Pakistan that withdrew its high commissioner from Delhi and expelled the Indian counterpart five years ago, when India changed the constitutional status of J&K. Islamabad had also cut off trade links with India. It had insisted that a reversal of the constitutional changes in Kashmir must precede any resumption of bilateral dialogue.

Before traveling to Islamabad, Jaishankar promised to be "civil and courteous", and just before his arrival in Islamabad, the former Pakistan PM, Nawaz Sharif, had reaffirmed the desire for normal ties with India and did not mention Kashmir.

At the SCO summit, Jaishankar kept his word on being civil, and PM Shehbaz Sharif departed from his recent tendency to rake up Kashmir at every occasion. Jaishankar was also measured in his comments on the question of terrorism. While pointing to the essence of the SCO Charter — to combat terrorism, separatism and extremism — Jaishankar asked Pakistan to reflect honestly on how the encouragement to these forces has undermined peace between the two countries.

Even these limited steps are likely to come under severe criticism in both countries. In Pakistan, the government will be accused of diluting the position on Kashmir's constitutional status. In Delhi, there will be questions about Pakistan's support for cross-border terrorism. The coming weeks will show if there is enough give and take on Kashmir and terror to insulate cooperation in other domains. While it is early days, Delhi and Islamabad deserve two cheers for trying to create diplomatic space for renewed engagement.

PAKISTAN'S OTHER FRONT

C. Raja Mohan Writes: The relentless focus on India's bilateral engagement with Pakistan means that far more important developments in and around our neighbour are ignored in the Indian public discourse. Even a brief look at the Durand Line that separates Pakistan and Afghanistan



today could be far more revealing than the speculation on External Affairs Minister Subrahmanyam Jaishankar travelling across the Radcliffe Line to Pakistan this week.

For Your Information-

- According to the writer, despite occasional advances in bilateral relations, minor and major, over the last many decades, the deeply problematic structure of the relationship has not changed. Big breakthroughs in bilateral ties often looked so close, but have remained quite far and elusive. Even if some positive results come from Jaishankar's visit, they are unlikely to make a serious difference to the congealed character of the relationship.
- The relationship has remained frozen for decades means it is of little consequence either for the region or the world beyond. Occasional military crises, following terror attacks in India, draw the world's attention to the dangers of escalation of the conflict between India and Pakistan to the nuclear level.
- The continuing conflict between Iran and its neighbours, and Tehran's confrontation with the West continues to rock the world. With the stage now set for a war between Iran and Israel (backed by the US) and the talk of a regime change in Iran, many fear that the dynamic around Iran could trigger the Third World War.
- The Soviet invasion of Afghanistan to protect a revolutionary regime in Kabul that came to power in 1978. The radical Islamic jihad against it, organised by the US and its regional allies, including Pakistan, succeeded in bleeding the Russian bear, and ousting it from Afghanistan by the end of the 1980s. But it normalised Islamic militancy and, more broadly, religious extremism in the Subcontinent. Pakistan, which actively supported the jihad in Afghanistan, was also consumed by it at home, thanks to the politics of Islamisation under General Ziaul Haq in the 1980s.
- A major offshoot of the Afghan jihad was the rise of the Taliban in Afghanistan and its support for al Qaeda, which directed the terror attacks against Washington and New York in September 2001. That in turn led to the US invasion of Afghanistan in 2001 and a massive but failed effort to drain the swamps of violent religious extremism and build a modern Afghan state. That failure ended in the Taliban walking back to power in Kabul in August 2021.
- For the last half century, the geopolitical churn in Pakistan's western borderlands did much to shape the internal, regional, and international relations of South Asia, including the bilateral ties between India and Pakistan. We are entering a new phase in that historical trend line. The answers to India's problem on the Radcliffe Line might well depend on the kind of lessons that Pakistan might draw from the turbulence on its western frontiers.

POSSIBLE THAW BETWEEN INDIA, PAKISTAN ON CRICKET: WHERE THINGS STAND NOW

If signals emerging from India-Pakistan meetings held on the sidelines of the SCO summit in Islamabad remain steady, India will travel to Pakistan for the ICC Champions Trophy in February next year.

The last Indian team to cross the border for cricket was M S Dhoni's side that played the Asia Cup in June-July 2008. So, if things were to ultimately work out, it would have taken 16 long years to untangle cricket from the complexities of India-Pakistan politics.



In the winter of thaw, a peace drill from an earlier era could play out again — doves could be released, gates long shut could open, Indian politicians could be seen in Pakistani stadiums, and taxi drivers in Lahore could refuse to take money from visitors from Delhi.

Pakistani fans long for that lost Imran era, their cricket's golden age. They miss those gutsy men who would never give up — the cornered tigers who won the 1992 World Cup after the world had written them off. As if on rebound, many Pakistanis have fallen for the aggressive Punjabi boy next door — Virat Kohli reminds them of their yesteryear heroes, the Javed Miandads, Wasim Akrams, and Waqar Younis whom the world could not intimidate.

Indeed, Virat is expected to get a Beatles-scale welcome in Pakistan next year. In an interview with The Indian Express in June, former Pakistan captain Azhar Ali had said: "The day Virat plays in Lahore, Karachi, Rawalpindi or in Multan, only then you guys will understand his craze in Pakistan... The stadium will be filled with green jerseys, but he will receive the same amount of support as Babar Azam and Shaheen Shah Afridi..." It would be a goosebumps moment for both nations, the most impactful of peace initiatives.

The role of cricket diplomacy

Cricketers have helped build bridges between the two sides earlier too.

Back in 1978, Bishan Singh Bedi had developed, by the end of the tour, a life-long friendship with General Zia ul Haq, Pakistan's ruler at the time. Bedi read in a newspaper about a patient with a rare blood group who needed a transfusion urgently. The Indian captain had the same blood group, and he ended up donating blood. Zia got to know, and a bond was formed. When the General visited India, he sent out a message, "I want to meet the Sardar again."

In 2004, at tea with the players in the Prime Minister's residence ahead of the Indian team's departure for Pakistan, Atal Bihari Vajpayee handed captain Sourav Ganguly a bat with the message, "Khel hi nahin, dil bhi jeetiye (Win not just games, but hearts, too)".

Of course, the burden of being ambassadors of the country and messengers of peace can be distracting for professional sportspersons. Kohli and Rohit Sharma would do well to remember Ganguly's famous pep talk in the dressing room during the series-deciding one-dayer: "Dil toh theek hai, game jitna hai humko (Hearts are fine, we have to win the game)".

CJI NAMES JUSTICE KHANNA AS HIS SUCCESSOR

Chief Justice of India D Y Chandrachud has written to the Union Law Ministry, naming Justice Sanjiv Khanna, the second-most senior judge of the Supreme Court, as his successor. When approved by the government, Justice Khanna will be the 51st Chief Justice of India and will have a tenure of 6 months in office before retiring on May 13, 2025. With CJI Chandrachud set to retire on November 10, the government, as per convention, had written to him last week requesting him to name his successor in office.

For Your Information-

- The Chief Justice of India and the other judges of the Supreme Court are appointed by the President under clause (2) of Article 124 of the Indian Constitution. It is mentioned in Article 124 that appointment by the President is to be done "after consultation" with judges of the Supreme Court, as the President may "deem necessary".



- Article 217, which deals with the appointment of High Court judges, says the President should consult the CJI, Governor, and Chief Justice of the High Court concerned. Further, the tenure of a CJI is until they attain the age of 65 years, while High Court judges retire at 62 years. The more than two decades-old collegium system is followed in the appointment of judges, consisting of five seniormost judges of the Supreme Court and the High Courts. The government gets a background inquiry done by the Intelligence Bureau (IB) at times from the names first suggested for appointment by the collegium. While the government can also raise objections, usually the collegium's will prevails. The term "collegium" is not mentioned in the constitution, which only speaks of consultation by the President.
- Given the ambiguity of the word "consult", this method of appointment has often been challenged in the courts, leading to cases such as the First Judges Case where it was held that recommendation made by the CJI to the President can be refused for "cogent reasons". This meant the President or the executive would be in a more influential position in deciding appointments. With subsequent cases and judgements, this changed.
- The Supreme Court laid down guidelines for appointments and transfers — leading to the present form of the collegium in which decisions are to be taken by a majority of the five seniormost judges, a result of the 'Third Judges Case'. And so, in the last few years, the common understanding was that the independence of the judiciary from the executive was to be guarded in matters of appointments.

Usually, the seniormost judge of the court after the chief justice (in terms of the years served) is recommended as the successor. This convention was memorably discarded by former Prime Minister Indira Gandhi, who appointed Justice AN Ray as CJI in 1973 over his seniors for a CJI more favourable to her regime.

- According to the government's Memorandum of procedure for the appointment of Supreme Court Judges, seniority is to be the norm. It says the Union Minister of Law, Justice and Company Affairs seeks the recommendation of the outgoing Chief Justice of India for the appointment of the next CJI.

After the collegium's recommendations are finalised and received from the CJI, the Law Minister will put up the recommendation to the Prime Minister who will advise the President on the matter of appointment.

SC: BENCHMARK DISABILITY PER SE NO BAR FOR ADMISSIONS

THE SUPREME Court on Tuesday ruled that only the existence of the benchmark permanent disability of 40 per cent does not bar a candidate from being considered for admission to an educational institution unless a medical assessment board is of the opinion that the disability will come in the way of pursuing the course.

For Your Information-

- Confirming the admission of a candidate with 45 per cent permanent disability for the MBBS course, a bench of Justices B R Gavai, Aravind Kumar and K V Viswanathan said, "We hold that quantified disability per se will not disentitle a candidate with benchmark disability from being considered for admission to educational institutions. The candidate will be eligible if the Disability Assessment Board opines that notwithstanding the quantified disability the candidate can pursue the course in question."

4TH FLOOR SHATABDI TOWER, SAKCHI, JAMSHEDPUR



- Referring to the Rights of Persons with Disabilities (RPwD) Act, 2016, the bench underlined the need to follow the principle of reasonable accommodation as laid down in Section 2(y) of the Act. The section defines “reasonable accommodation” as necessary and appropriate modification and adjustments, without imposing a disproportionate or undue burden in a particular case, to ensure to persons with disabilities the enjoyment or exercise of rights equally with others.

- The court said this “should not be understood narrowly to mean only the provision of assisting devices and other tangible substances which will aid persons with disabilities”. “If the mandate of the law is to ensure a full and effective participation of persons with disabilities in society and if the whole idea was to exclude conditions that prevent their full and effective participation as equal members of society, a broad interpretation of the concept of reasonable accommodation which will further the objective of the RPwD Act and Article 41 of the Directive Principles of State Policy is mandated,” it said.

Do You Know-

- December 3 is marked by the UN as International Day of Persons with Disabilities in a bid to promote a more inclusive and accessible world for the differently-abled and to raise awareness for their rights. In India, the Ministry of Social Justice and Empowerment observed the day with essay and painting competitions among other events. About 2.2% of India’s population lives with some kind of physical or mental disability, as per the National Statistics Office report on disability in 2020.

- Until the 2011 census, there were questions on seven kinds of disabilities in the questionnaire. This list of disabilities was expanded to 21 when the Rights of People with Disabilities was introduced in 2016. Accordingly, the 2019 report included questions to identify people with temporary loss of an ability as well as neurological and blood disorders in addition to the earlier definition, that included mental retardation and permanent inability to move, speak, hear and see. Significantly, the revised definition recognises deformities and injuries of acid attack victims as disabilities, entitling them to various relief measures.

- Rural men had the highest prevalence of disability in India, according to the NSO report. A higher proportion of men were disabled in India compared with women, and disability was more prevalent in rural areas than in urban areas. Inability to move without assistance was the most common disability. More men experienced locomotor disability than women.

- The 2011 census estimated that the number of people with disabilities in India is close to 2.68 crore (or 2.2% of the population) — that is more than the entire population of Australia. This number was based on the older definition of disability, yet the proportion of disabled people in the population is not different from the 2019 NSO report, which used the expanded definition of disability. However, the 2019 edition of disability statistics reported a slightly higher prevalence than those reported in earlier editions of the survey.

- The Rights of Persons with Disabilities Act, 2016 gave effect to the United Nations Convention on the Rights of Persons with Disabilities. The convention was adopted by the UN General Assembly in December 2006, and entered into force in 2008. India ratified the convention in 2007.

- The 2016 Act, which repealed and replaced The Persons with Disabilities (Equal Opportunity, Protection of Rights and Full Participation) Act, 1995, commenced in April 2017. It mandated the central government to notify guidelines and standards for public buildings, and to review them “from time to time” based “on the latest scientific knowledge and technology”.



EXPRESS VIEW: ON ABETMENT TO SUICIDE, COURT DRAWS A LINE

Last week, in an important ruling, the Supreme Court tightened the law on how a case of abetment to suicide can be made against an individual, specifically in the workplace. The Court's clarification was much needed given that the pressures of a workplace, especially under the glare of social media, makes this an increasingly grey area.

In a short ruling by a bench of Justices JB Pardiwala and Manoj Misra, the Supreme Court overturned the Allahabad High Court's decision to allow a trial in a case where a 60-year-old employee had died by suicide. The family of the employee attributed it to pressure from senior management to accept voluntary retirement. Apart from the FIR by the brother of the deceased, two statements by co-workers spelt out the allegation. However, like in several such cases, the law tests the line between a stressful workplace and criminal intent to push someone to commit suicide. The SC rightly drew a crucial distinction between relationships in the personal space and the workplace when determining what constitutes abetment. "In normal circumstances, relationships by sentimental tie cannot be equated with the official relationship. The reason being different nature of conduct to maintain that relationship. The former category leaves more expectations, whereas in the latter category, by and large, the expectations and obligations are prescribed by law, rules, policies and regulations," said the ruling.

The law on abetment to suicide has been instrumental in curbing larger societal problems such as dowry deaths. The penal provision — Section 306 of the Indian Penal Code, that has been retained in the Bharatiya Nyaya Sanhita — carries a jail term of up to 10 years. However, its misuse is also rampant. Even as workplaces are evolving to focus on the mental health and well-being of employees, the threat of criminal law is concerning. For example, mere utterances by the accused or a mention of an accused in the FIR or suicide note, cannot in themselves constitute grounds for a case. The police, and even the courts, defer a fair reading of the allegation to a trial since it involves ascertaining the intent of the accused. The SC ruling wisely cautions against the trend of taking allegations at face value. "The test that the Court should adopt in this type of cases is to make an endeavour to ascertain on the basis of the materials on record whether there is anything to indicate even prima facie that the accused intended the consequences of the act, i.e., suicide," the court said.

SC RECALLS ITS 2022 JUDGMENT ON BENAMI LAW AMENDMENTS

Allowing a petition filed by the Center, the Supreme Court Friday recalled its August 23, 2022, order declaring certain provisions of the Benami Transactions (Prohibition) Act, 1988, as unconstitutional.

— The SC also restored the civil appeal for fresh adjudication before a bench to be nominated by the CJI on the administrative side. It also allowed all those aggrieved by the application of the 2022 judgment in their cases to seek review of the respective orders.

— The verdict in 2022 held as unconstitutional Section 3(2) of the Benami Transactions (Prohibition) Act, 1988, that prescribed a jail term for entering into benami transactions.

—The order also held that the Act, which was amended in 2016, can only be applied prospectively and quashed all prosecutions or confiscation proceedings before the amended Act came into force.



— The bench also expressed concern on certain findings in the top court’s judgment upholding the Prevention of Money Laundering Act, 2002 allowing authorities to take possession of property before trial in exceptional cases saying it leaves the scope for arbitrary application.

For Your Information:

— Benami in Hindi means without name. So, a property bought by an individual not under his or her name is benami property. It can include property held in the name of spouse or child for which the amount is paid out of known sources of income.

— A joint property with brother, sister or other relatives for which the amount is paid out of known sources of income also falls under benami property. The transaction involved in the same is called benami transaction.

— As a usual practice, to evade taxation, people invest their black money in buying benami property. The real owner of these properties are hard to trace due to fake names and identities. The person on whose name the property is purchased is called benamdar.

— The first act against benami properties was passed in 1988 as the Prohibition of Benami Property Transactions Act, 1988. To curb black money, the Modi government in July 2016 decided to amend the original act. So after further amendment, Benami Transactions (Prohibition) Amendment Act, 2016 came into force on November 1, 2016.

EXPRESS VIEW ON UP’S FOOD CONTAMINATION ORDINANCES: DEEPENING MISTRUST

All the official talk about consumer safety around the Uttar Pradesh government’s decision to bring in two ordinances on food contamination, making the offence cognisable and non-bailable, cannot divert attention from a disquieting intent, and effect. They will act as a communal dogwhistle that preys on the majority’s notions of purity and pollution, and targets an already insecure minority. Titled ‘Prevention of Pseudo and Anti-Harmony Activities and Prohibition of Spitting Ordinance 2024’ and ‘Uttar Pradesh Prevention of Contamination in Food (Consumer Right to Know) Ordinance 2024’, some provisions are unexceptionable. That food and beverage sellers should wear head covers, gloves and masks when cooking and serving, and that there should be CCTV coverage of the kitchen and dining areas of establishments, is reasonable. But what purpose of food safety would be served by mandating that personnel should wear identity cards at work? Such identity cards can, and will, come in handy for communal profiling. The legislative power to issue ordinances, as the Supreme Court has clarified, is “in the nature of an emergency power” given to the executive only to “meet an emergent situation”. What exigency, which could not have been met by enforcing existing food safety regulations, demanded such a move by the UP government? And what does food safety have to do, anyway, with social “harmony”?

These ordinances come in a larger, sobering context. In July, the Muzaffarnagar police ordered eateries along the route of the Kanwar Yatra to display the owners’ names. This was, the police said, so that “confusion” among the strictly vegetarian kanwariyas could be avoided. Two months after the SC stayed that order, correctly pointing out that it was “contrary to constitutional and legal norms”, the UP government issued statewide directives for eateries to mandatorily display the names and addresses of operators, proprietors and managers, citing “incidents of adulterating food items like juice, dal, and roti with human waste, inedible, or dirty substances”. Now, the two ordinances confirm a disquieting trend — from “bulldozer justice” to “love jihad” and



“encounters” that the police wears as a badge of pride, to the new restrictions in the garb of food safety, UP is becoming a fount of bad laws and governance practices that should not be emulated.

The need to “ensure trust of consumers” has been touted as one of the justifications for the ordinances. But they put at risk, in fact, the trust that citizens repose in each other in an increasingly layered and changing economy. The prime mover of the gig economy, where everything from food to groceries to services reaches citizens’ homes on the back of innovations and efficiencies brought in by new technologies, and which provides employment to millions, is that same trust. In threatening to erode it, the UP ordinances are a terrible backward step.

ORDERED IN BABA SIDDIQUE MURDER CASE: HOW BONE OSSIFICATION TEST WORKS, ITS APPLICATION IN LAW

One of the accused in the murder of former Maharashtra MLA Baba Siddique claimed before a court in Mumbai on Sunday that he was 17 years old — and should thus be tried under the Juvenile Justice Act. The Mumbai Police Crime Branch, which sought custody of the accused, said an Aadhaar card found on the individual showed his age as 19.

For Your Information-

- Ossification is the natural process of bone formation. This starts from the early developmental stage of the foetus and continues until late adolescence, but differs slightly from individual to individual. Based on the stage of development of the bones, experts can determine the approximate age of the person.
- In a bone ossification test, X-rays of a few bones, such as those of hands and the wrists, are conducted to determine skeletal and biological development. The images may be compared with X-rays of standard development, which can assist in determining the age. The analysis could be also based on a scoring system that looks at individual bones on the hands and wrists and their growth, and compares them with the standard of maturation of bones among a certain population.

Do You Know-

- In India, a person who is below 18 years of age is considered a minor. The criminal law differentiates between a child and an adult when it comes to procedure, correction and rehabilitation, and punishment.

Anyone below the age of 18 is governed by the Juvenile Justice (Care and Protection of Children) Act, 2015. A child who is found to be in conflict with the law cannot be sent to a prison meant for adults, and is instead sent to an observation home. Instead of a court, the child is brought before a Juvenile Justice Board (JJB) comprising a magistrate and two social workers with experience in working with children. After an inquiry, the Board may direct the child to be let off with an admonition, community service, or a maximum of three years in a special home, among other options.

- Following an amendment to the J J Act in 2021, in cases where “a child above the age of sixteen years” has been apprehended for a “heinous offence” (for which the minimum punishment is seven years’ imprisonment), the JJB must “conduct a preliminary assessment with regard to his mental and physical capacity to commit such offence, ability to understand the consequences of the offence and the circumstances in which he allegedly committed the offence” before deciding whether the child should be tried as an adult.



ON THE EXCEPTION TO MARITAL RAPE

The story so far:

A three-judge Bench headed by Chief Justice of India (CJI) D.Y. Chandrachud has begun hearing a batch of petitions challenging the constitutional validity of Exception 2 to Section 375 of the Indian Penal Code, 1860 (IPC). The challenge also extends, by implication, to Exception 2 of Section 63 of the Bharatiya Nyaya Sanhita (BNS), 2023, which supersedes the former provision. These provisions grant legal immunity to Indian husbands by stipulating that “sexual intercourse or acts by a man with his wife, provided she is not under 18 years of age, do not constitute rape”.

What do statistics say?

While data on marital rape remains limited due to stigma and legal barriers, available statistics are deeply concerning. Data from the National Family Health Survey-5, conducted between 2019 and 2021, indicates that nearly one-third of married women (18-49 years) in India have experienced physical or sexual violence at the hands of their husbands. Additionally, global statistics reveal that approximately three-quarters of all sexual assaults transpire within intimate settings, often perpetrated by someone familiar to the survivor.

What is the genesis of the exception?

The MRE is a colonial relic, originating from the “doctrine of coverture” in English common law, which severely curtailed a married woman’s legal autonomy. As elucidated by the Supreme Court in *Joseph Shine versus Union of India* in 2018, this doctrine assumed that the husband and wife became a single entity after marriage, that is, “the very being or legal existence of the woman is suspended during the marriage, or at least is incorporated and consolidated into that of the husband”.

One of the earliest instances of codification of the MRE can be traced back to British jurist Matthew Hale, who wrote in a 1736 treatise that “the husband cannot be guilty of a rape committed by himself upon his lawful wife, for by their mutual matrimonial consent and contract: the wife has given up herself in this kind unto her husband, which she cannot retract.” Hale’s reasoning proved hugely influential and was subsequently adopted by several British colonies. However, in 1991, England outlawed the MRE in the landmark case of *R versus R* underscoring that the common law doctrine no longer represented the true position of a wife in present-day society.

What are challenges before the SC?

Section 375 of the IPC delineates seven conditions under which sexual intercourse is deemed rape, such as when it occurs without the woman’s consent, or when consent is obtained through coercion. Those convicted are punished with a prison term of at least 10 years, which can be extended to a life sentence, along with a possible fine. However, the provision stipulates two “exceptions”. The first exception pertains to medical procedures. As per the second exception, “sexual intercourse or sexual acts by a man with his own wife” do not constitute rape if the wife is over 18 years of age.

While the law initially granted immunity to husbands if their wives were under 15 years old, the Supreme Court revised this age limit to 18 years in *Independent Thought versus Union of India* (2017). The MRE, therefore, creates a legal fiction whereby, even if all the elements constituting the offence of rape are met, a conviction cannot take place if the parties are married and the wife



is over 18 years of age. However, a married woman can seek recourse to other criminal law provisions such as Section 85 of the BNS which criminalises subjecting a woman to “cruelty”. Civil remedies can also be availed under laws such as the Protection of Women from Domestic Violence Act (2005) but they are limited to “protection orders, judicial separation and monetary compensation”. The petitioners have argued that the exception is unconstitutional since it violates a host of fundamental rights. Foremost among them is Article 14 which guarantees the equal protection of laws to all persons. The MRE creates two distinct classes of victims of non-consensual sex by denying married women the protection of laws that are extended to unmarried women. This, according to the petitioners, also offends the principle of “substantive equality” by failing to address systemic barriers to ensure that all women regardless of their marital status receive equal protection against sexual violence. By specifically disadvantaging married women, the MRE violates their right to non-discrimination under Article 15(1).

Another important facet is the purported violation of the right to privacy and bodily integrity under Article 21. The Supreme Court’s ruling in *K.S. Puttaswamy versus Union of India* (2017) not only clarified that privacy was a fundamental right, it also affirmed the concept of decisional autonomy — the right of each individual to determine how and for what purposes their body may be used. As noted by constitutional law expert Gautam Bhatia the true brilliance of *Puttaswamy* lies in clearly establishing that the right to privacy is not merely anchored in physical spaces and institutions (such as marriage), but is fundamentally tied to individual self-determination. The right is, therefore, inseparable from the ability to make choices regarding the most integral aspects of one’s body and life. In *Joseph Shine*, the top court built on this jurisprudence by observing that “familial structures cannot be regarded as private spaces where constitutional rights are violated” and that doing so is “to obstruct the unfolding vision of the Constitution.”

What are the judicial precedents?

In March 2022, the Karnataka High Court in *Hrishikesh Sahoo versus State of Karnataka and Others* ruled that a married man can be prosecuted for raping his wife. Relying on a 2013 report authored by the Justice J.S. Verma Committee, which recommended the abolition of the MRE, Justice M. Nagaprasanna reasoned that no legal exception can be so absolute as to licence crimes against society. However, instead of striking it down, he made the exemption inapplicable in cases involving the commission of heinous sexual offences by husbands against their wives.

The case stemmed from a 2017 complaint by a woman against her husband, Hrishikesh Sahoo, accusing him of committing multiple sexual offences. He was also charged with sexual assault under the Protection of Children from Sexual Offences Act, 2012 (POCSO) for abusing their daughter. An appeal was subsequently filed challenging the High Court’s decision resulting in an interim stay being imposed by a Bench headed by former CJI N.V. Ramanna. In an affidavit filed before the top court, the Karnataka government, however, endorsed the High Court’s ruling.

In May 2022, the Delhi High Court rendered a split verdict on this issue. Justice Rajiv Shakdher deemed the MRE unconstitutional, asserting that it violates a woman’s bodily autonomy and expression. He characterised the exception as “steeped in patriarchy and misogyny,” adding that “the classification, in my opinion, is unreasonable and manifestly arbitrary as it implies that forced sex outside marriage constitutes ‘real rape,’ whereas the same act within marriage does not.” Conversely, Justice C. Hari Shankar opined that within marriage, sexual relations are a “legitimate expectation” making the MRE legal. “Introducing, into the marital relationship, the possibility of the husband being regarded as the wife’s rapist, if he has, on one or more occasions, sex with her



without her consent would, in my view, be completely antithetical to the very institution of marriage, as understood in this country, both in fact and in law”, he reasoned.

Following this split verdict, the petitioners moved the Supreme Court, which clubbed together all petitions related to the MRE in January last year. While an authoritative pronouncement is awaited, the top court in 2022 recognised for the first time that “sexual assault by a man against his wife can constitute rape” in a separate case concerning an unmarried woman’s right to seek medical termination of pregnancy. A Bench led by Chief Justice Chandrachud underscored, “We would be remiss in not recognising that intimate partner violence is a reality and can take the form of rape. The misconception that strangers are exclusively or almost exclusively responsible for sex and gender-based violence is a deeply regrettable one”.

What has the Centre stated?

The Union government’s latest Supreme Court affidavit is the first time that it has on record opposed the striking down of the MRE. During the proceedings before the Delhi High Court, the government had said that the “issue needs wider consultations” and that a review of existing criminal laws was pending at that time. Drawing from Justice Shankar’s opinion, the Centre has argued that marriage creates “a continuing expectation of reasonable sexual access” which is absent in the case of a stranger or of another intimate relationship. While acknowledging that a man has no fundamental right to violate his wife’s consent, it has contended that classifying such acts as “rape” is “excessively harsh” and “disproportionate”. It has also apprised the court that criminalising marital rape would affect the sanctity of the institution of marriage and potentially result in false allegations of marital rape.

Would a ‘new’ offence be created?

A pivotal question before the top court is whether striking down the MRE would result in the creation of a new offence, as it would allow for the prosecution of husbands who engage in non-consensual sex with their wives. Justice Shankar, in his opinion, responded in the affirmative and cautioned that there is an “absolute proscription” against this since such an authority rests exclusively with the legislature. However, senior advocate Rebecca John argued before the Delhi High Court that deeming the exception unconstitutional would not create any new offence, as the offence already exists— rather, it would simply revoke the legal immunity presently enjoyed by a specific class of individuals. In Independent Thought, while raising the age for the application of the MRE from 15 to 18 years, the top court noted that “by partly striking down Section 375 IPC, no new offence is being created”.

CHILD BETROTHALS ARE A PLOY TO ESCAPE PUNISHMENT: SC

Stating that marriages fixed in the minority of a child have the effect of violating their “free choice” and “childhood”, the Supreme Court on Friday asked Parliament to consider banning child betrothals by amending the Prohibition of Child Marriage Act (PCMA), 2006.

— A three-judge bench presided by Chief Justice of India D Y Chandrachud said “international law such as the Convention on the Elimination of All Forms of Discrimination Against Women (CEDAW) stipulates against betrothals of minors”.

— “Marriages fixed in the minority of a child also have the effect of violating their rights to free choice, autonomy, agency and childhood. It takes away from them their choice of partner and life



paths before they mature and form the ability to assert their agency,” said the bench, also comprising Justices J B Pardiwala and Manoj Misra.

— While saying that the Union Government had, in a note submitted after the judgment was reserved, requested the court to direct that PCMA prevails over personal law.

— On child marriages, the court said it “adversely affected” both sexes. “Girls who are married off early are not only denied their childhood but are also forced into social isolation...Boys who are married early are forced to take up more responsibilities and are pressured to play the role of a provider to the family, earlier in life,” it said.

— The court noted that since the enactment of PCMA, “the prevalence of child marriages in India has halved... from 47% to 27% in 2015-16 and 23.3% in 2019-2021” but that despite the Centre’s efforts, there remains a gap in implementing specific, targeted measures focused solely on the prevention of child marriage.

For Your Information:

— One in five girls and nearly one in six boys are still married below the legal age of marriage in India, a new study published in the Lancet Global Health on December 15, 2024.

— The Sustainable Development Goal (SDG) target 5.3 aims to end child marriage in girls by 2030 as part of a global commitment to “eliminate all harmful practices, such as child, early and forced marriage and female genital mutilation”.

— For girls, the annual rate of reduction in the prevalence of child marriage must increase from 1.9 per cent to 23 per cent globally to meet the SDG target.

— The all-India prevalence of child marriage in girls declined from 49.4 per cent in 1993 to 22.3 per cent in 2021 while that among the boys declined from 7.1 per cent in 2006 to 2.2 per cent in 2021.

— Child marriage was defined as marriage in individuals younger than 18 years for men and women. They calculated the annual change in prevalence during the study period for states and Union Territories and estimated the population headcount of child brides and grooms.

IN SIKAR, INDIA’S LAST SATI VILLAGE, CHORUS FOR TEMPLE TRUMPS FEAR OF POLICE ACTION

Almost four decades ago, when water was plentiful and most families still lived in Divrala village of Rajasthan’s Sikar district, Shekhawat Sadan, in the heart of the village, had a full house.

The families of brothers Sumer, Mangesh, Simpu and Gajraj shared the house, now painted in shades of blue and yellow. One by one, the brothers passed away — Sumer being the last, sometime in 2020 — and their families — save for Sumer’s son Bhupendra — moved out. The grand door to the house mostly remains padlocked now, while the residence is under the care of Bhupendra, who suffered a stroke.

But in 1987, Shekhawat Sadan was at the heart of an event that shook the state and the nation: on September 4, 1987, Roop Kanwar, 18, allegedly sat on her husband Maal Singh’s funeral pyre and committed sati. While the family claimed her act was voluntary, activists have maintained that she was forced to do so.



Besides forcing the ouster of Chief Minister Hari Dev Joshi of the Congress, Roop's death led to the enactment of the Commission of Sati (Prevention) Act, 1987.

Last week, in one of the last remaining cases lodged in connection with the incident, a special Sati Nivaran Court in Jaipur acquitted eight persons accused of glorifying the act. Although several cases were filed and hundreds were named as accused, activists say not a single person has been convicted till date.

As Bhupendra opens the main door of Shekhawat Sadan, he says it's mostly women who "pray" to Roop. "There are a few every day. On gyaras (her death anniversary), there are thousands," he says, straining to speak.

Roop, the youngest of six siblings, was married to Sumer's son Maal Singh in January 1987, but he passed away from an illness in a Sikar hospital eight months later. After Maal Singh's death, Bhupendra's other brother, Pushpendra, died in an accident. Their sister Manju lives in Jodhpur with her family.

At Shekhawat Sadan, Roop's room is visibly better maintained than the rest of the house, which is marked by blackening walls and climbing moss. Now a shrine, Roop's room is the first on the right.

Overlooking the bed is a window from where visitors "pray or pay their respects" to Roop from outside the room. Outside, above the window, the text reads: "Shri Roop Kanwar Sati Maa."

At Divrala, the legend of Roop Kanwar has only got stronger with each passing year and with every retelling: a woman says the gaanth (lump) on her throat disappeared after she prayed to Roop, another one claims that her unemployed uncle got a job and her daughter was finally blessed with a child after years of marriage, and yet another woman says her family finally found a groom for her.

However, seniors like Jai Singh, 75, write off Roop's impact. He says, "Only a few who worship Roop in their houses or at her home or the spot of her pyre."

At the site where Roop allegedly committed sati, Dharamveer Singh, 35, who lives nearby, says "devotees pray with incense sticks, coconuts, oil, etc., and leave money too". But there is no priest to oversee these prayers since it violates the Sati Prevention Act.

Near the sati site are two structures, said to have been built in memory of the women who committed sati before Roop — at least four women from Divrala are said to have committed sati. In the house adjacent to Roop's, the family has a small taak (a shelf built into the wall outside their home) to remember one such woman: "Sati dadi sa Mitthu Kanwar sa".

Sati temples all over Rajasthan

The Sati Prevention Act prohibits the construction of a temple or structure in memory of a sati. Its Section 7 empowers a District Collector to remove certain temples or other structures, while Section 8 allows them to seize any funds or property collected or acquired for the purpose of sati glorification.

But Rajasthan is no stranger to sati temples. From a regular-sized temple in Jaipur's residential neighbourhood of Shastri Nagar to a grand, Wes Anderson-esque temple in Jhunjhunu, hundreds of such temples exist across the state.



Kareeri village, barely 5 km from Divrala, has at least two sati temples. Before Vimal Sharma, the priest at one of them, his father and grandfather were priests at the temple.

In Jharli, about 30 minutes from Divrala, lies a grand Om Shakti Temple. At the heart of this temple is a 'Sati Maa' who consigned herself to flames some years before Roop. Today, the flames are depicted in the form of a lotus, with her "husband's" photo kept nearby. The temple was inaugurated in April 1983 by Bhawani Singh of the erstwhile Jaipur royal family and father of current Deputy CM Diya Kumari.

And yet, fear of police action over a demand for a sati temple in Divrala almost seems unfounded at present because "strict" action in the case was taken only in the months and years after 1987 — that too, largely due to public outcry and the media glare.

In the latest case, government lawyers failed to prove the commission of sati. Aman Chain Shekhawat, who appeared for some of those acquitted, says, "To prove the violation of Section 5 (glorification of sati), Section 3 (attempt to commit sati) needs to be proved, but the prosecution, investigation agency could not prove Section 3."

Activists, however, claim that one doesn't need to prove commission of sati in order to prove its glorification.

Led by People's Union for Civil Liberties (PUCL) national president Kavita Srivastava, 14 women organisations — who term the probe in the Roop Kanwar cases as "shoddy — say they are "not surprised" over the recent acquittals. Though the organisations have urged CM Bhajan Lal Sharma to file an appeal, it seems unlikely.

Stating that an appeal filed by them has been pending for 20 years, the organisations have accused successive Rajasthan governments led by Vasundhara Raje (BJP) and Ashok Gehlot (Congress) of not pursuing the case "since both parties did not wish to antagonise the Rajput vote bank and leaders from both sides were implicated in the case".

A demand in Divrala

In Divrala, locals who earlier spoke of Roop in hushed tones due to fear of police action, have openly started demanding a temple for her. The fear seems to have also perhaps ebbed because most of Divrala residents were not around in 1987 or were too young to remember the police crackdown.

Many feel that a temple will change the fortunes of the sleepy village, where farmers are dependent on rain due to the lack of a water source.

However, women's groups say a temple cannot come up at all because the Act is very clear when it comes to temples. However, though the Act also covers sati cases preceding the law, the subsequent state governments have looked the other way when it comes to existing Sati temples.

Divrala also assumed a special place in Rajput pride, with some of those hailing from the village, adding the name of the village to their own, and parallels were drawn to Chittorgarh's Padmavati, the one who is said to have jumped into a pyre to escape Alauddin Khilji's advancing army.



SC CENSURES HARYANA, PUNJAB OVER LACK OF ACTION IN STUBBLE-BURNING CASES, SUMMONS CHIEF SECRETARIES

The Supreme Court on Wednesday slammed Haryana and Punjab for their “defiant attitude” against taking penal action on persons burning crop residue ahead of the winter season and aggravating air pollution across north India, especially in and around the national capital.

A three-judge Bench headed by Justice A.S. Oka expressed shock at Haryana’s submission that it could detect no fires despite information received from the Indian Space Research Organisation (ISRO) about their exact locations.

“ISRO tells you the locations, yet you say you could not find any fires? Why are you shy of prosecuting people? This is not a political matter... This is defiance on the part of Haryana, encouraging people to commit offences,” Justice Oka addressed the counsel for Haryana.

The court said there were 191 breaches, but people got off by paying a nominal fine. Penal action was not taken in even one case. “These people will be happy to pay the nominal fine and continue to commit these offences,” it said.

Justice Oka asked why the Haryana Chief Secretary, who was “no politician”, was worried about prosecuting offenders. The Bench directed the Chief Secretary to be present in court for the next hearing on October 23.

Turning to Punjab, the court said ISRO had detected 267 cases of stubble burning in the State. Of these, 103 were closed with a nominal fine and only 14 violators were booked.

Punjab Advocate-General Gurminder Singh said preventing or taking action against stubble burning was a “slightly challenging job”. He said “at the tail end of the problem were farmers”. “Are you not able to maintain the law and order situation in the State then?” the court said.

The Bench ordered the Punjab Chief Secretary to be also present personally in court for the next hearing.

The court told Additional Solicitor-General Aishwarya Bhati, for the Commission for Air Quality Management (CAQM) in National Capital Region and Adjoining Areas, to note that many of its members were found absent during its meetings.

HALF OF UAPA INVESTIGATIONS PENDING FOR OVER THREE YEARS

Three recent developments have put the spotlight back on prolonged detentions, stalled investigations, and inordinate delays on bail matters under the draconian Unlawful Activities (Prevention) Act (UAPA), 1967.

On October 12, former Delhi University Professor G.N. Saibaba died just months after getting acquitted in a UAPA case, following a decade of incarceration. Last week, the bail plea of Jawaharlal Nehru University student, Umar Khalid, who was arrested under the UAPA four years ago, was once again postponed, as the Bench could not assemble with the judges on leave. Last month, the Supreme Court granted bail to a UAPA accused, who was in prison for more than four years, citing the delay in trial.



Twice this year, the Supreme Court made observations related to bail denials and delays in trial in UAPA cases. In August, the Court reiterated that “bail is the rule and jail is the exception” even if the offence is under the UAPA. In September, the Court observed that the graver the offence and the more the restrictions on bail, the faster the trial should be completed.

Data show that half the cases filed under the UAPA were pending at various stages of police investigation for over three years, at the end of 2022. This is the second highest such share across 122 crime heads, such as murder and gambling.

Over 2,020 UAPA cases were pending investigation for over three years, 50% of the total such cases pending at the end of 2022 (4,037). The UAPA is a stark outlier in the share of such cases. Cases registered under the Forgery and Counterfeiting Act, 1981 (57%) and Passports Act, 1967 (43%) had the next highest shares.

Not only is the share of UAPA cases pending investigation for more than three years high, but it has also increased in the recent past. The share of UAPA cases pending for over three years increased from 40% at the end of 2019 to 50% at the end of 2022.

The number of those convicted, acquitted, and discharged formed less than 10% of the people arrested in the period, pointing to delayed trials.

While stalled police investigations and delayed trials are par for the course in the Indian justice system, what makes laws such as UAPA draconian is that the people arrested are rarely let out on bail.

While 23% of those arrested under the UAPA got bail, 3% were convicted and 7% were acquitted. The rest 67% were languishing in jail. Together, the charts show that in cases filed under the UAPA, the process is the punishment.

EXPRESS VIEW ON G N SAIBABA'S DEATH: A SOBERING REMINDER

All humans imagine hell. From Dante to Salman Rushdie, from European to Egyptian civilisations, everyone has their own idea of hell. The Anda cell was just that,” G N Saibaba recollected in an interview to this newspaper, a few weeks after he was acquitted by the Nagpur Bench of the Bombay High Court in March. The Court’s two-judge bench had described the former Delhi University academic’s incarceration as a “failure of the justice system”. These words resonate poignantly, after Saibaba died on Saturday due to complications following a surgery for gallbladder stones, aged 57. His untimely death should bring a sobering moment for the state which, as the HC pointed out, did “not follow due procedures” in charging the English lecturer under stringent UAPA provisions. It should haunt the criminal justice system, which heaped indignity on the wheelchair-bound academic by detaining him in a cramped egg-shaped concrete enclosure meant for terrorists and high-security convicts. Saibaba’s demise should occasion urgent rethinking and reflection in the judicial system. For, though the HC verdict was a welcome affirmation of the rule of law in a constitutional system, it came after 10 long years. In this period, the Nagpur Bench had rejected several bail pleas by Saibaba’s lawyers, including those on health grounds.

Saibaba was arrested in May 2014 and charged by the Maharashtra government with alleged Maoist links. He was convicted by a trial court, three years later. However, in October 2022, a two-judge bench of the Mumbai High Court set aside the order on the ground that the state did not take proper sanction before arresting the academic. Barely a few hours after the verdict, however, the

4TH FLOOR SHATABDI TOWER, SAKCHI, JAMSHEDPUR



government sought a stay. The SC, in a rare and unusual decision, constituted a Special Bench, which sat on a Saturday morning and suspended the Bombay HC ruling. Six months later, in April 2023, another SC Bench sent the case back to the Mumbai HC. In March, the HC not only reiterated its previous ruling, it also came down heavily on the state for failing to back its charges with sound evidence. The Maharashtra government had argued that under UAPA, the burden of proof shifts to the accused if “certain articles such as explosives are found at the site of the offence”. But in court, it produced only electronic documents and a few pamphlets. In a resounding rejection of the state’s case, the court ruled that merely “downloading material about the philosophy of Naxalism” or even “sympathising” with the ideology should not invite arrest under UAPA. It dismissed the allegations as “vague”.

As Saibaba told this paper, he “lost much more than the 10 years” he spent in jail. He talked of the pain of not meeting his mother before she passed away. Delhi University’s Ram Lal Anand College terminated his services and Saibaba’s medical complications became more severe. Today, when Saibaba is no more, the judiciary would be failing its constitutional role if it doesn’t find ways to correct a system in which hard laws are invoked indiscriminately and, all too frequently, justice is denied through delay. It is, yes, a matter of the citizen’s life and death.

WHO GETS THE PREFERRED SYMBOL WHEN THERE ARE TWO FACTIONS?

The story so far:

Nationalist Congress Party (NCP) founder Sharad Pawar has filed a plea in the Supreme Court, seeking a direction to restrain the Ajit Pawar faction from using the ‘clock’ symbol in the upcoming assembly polls in Maharashtra.

How are symbols allotted?

Symbols are allotted to political parties as per the provisions of the Symbols Order by the Election Commission of India (ECI). In the largest democracy where a sizeable population is still illiterate, symbols play a crucial role in canvassing and voting process. A national or State recognised political party has a reserved symbol that is not allotted to any other candidate in any constituency.

What is the present issue?

The NCP at present is a State recognised party in Maharashtra and Nagaland. In July 2023, there was a split in the NCP with the Ajit Pawar faction claiming the support of 41 MLAs out of 53 in the Maharashtra assembly. The ECI in February 2024 recognised Ajit Pawar faction as the real NCP and allotted to it the ‘clock’ symbol reserved for NCP during the Lok Sabha elections in April-May 2024. The NCP (Sharadchandra Pawar) [NCP(SP)] was allotted a common symbol of ‘man blowing turha.’ The present plea claims that during the Lok Sabha election, voters were confused as to which faction represented the real NCP. The NCP (SP) therefore has sought a direction to freeze the ‘clock’ symbol and allot a new symbol to Ajit Pawar faction.

What are past instances?

As per the Symbols Order, in case of split in a recognised political party, the ECI decides as to which faction or group is the recognised political party. It allots the reserved symbol to such faction. However, the ECI has also frozen symbols in the past before determining the dispute. The ‘two leaves’ symbol of the AIADMK party in Tamil Nadu was frozen in January 1989 and April



2017 due to competing claims. The 'bow and arrow' symbol of Shiv Sena was also frozen before a bye-election in October 2022.

What can be the way forward?

The Supreme Court in *Sadiq Ali versus the ECI* (1971), laid down the 3-test formula for determining which faction is to be recognised as the original political party. These are the aims and objectives of the party; its affairs as per the party's constitution that reflect inner party democracy; and majority in the legislative and organisation wings.

The ECI in its order in February 2024 held that there was no dispute between the two factions on the first test and that neither of the factions followed the party's constitution rendering the second test redundant. Since the organisational election of NCP in the year 2022 was shrouded with doubt, it went on to decide the issue solely based on majority in the legislature as a majority of legislators supported the Ajit Pawar faction.

However, in the Maharashtra Lok Sabha elections, the NCP (SP) faction despite fighting with its new symbol won eight seats as against just one seat won by the NCP led by Ajit Pawar that fought on its traditional 'clock' symbol. The Supreme Court generally does not interfere in the poll process as it is the domain of the ECI. Nevertheless, in exceptional circumstances, it has given directions to the ECI for ensuring a fair election process. In the instant case, because of the performance of the NCP (SP) in the recent Lok Sabha election, the third test of legislative majority can again be disputed. The decision of the ECI to recognise the Ajit Pawar faction as the real NCP has also been challenged in the SC by NCP(SP). Considering these factors, the court may direct the ECI to freeze the 'clock' symbol for the assembly elections to be held in November 2024. The real reform required is institutionalising internal democracy through regular inner-party elections in our political parties. Various experts are of the view that the ECI should not be involved in monitoring these elections as it will drag a constitutional authority into the muddle of party politics. It is the members of various political parties as responsible citizenry who need to demand and operationalise such internal democracy.

TAKE THE GAUNTLET

On October 11, a passenger train collided with a stationary goods train fast enough for 13 bogies to overturn and one to catch fire, in Kavaraipettai near Chennai. No casualties were reported although several people were injured. No deaths and swift post-event action would have rendered this incident less significant if not for the recent spate of railway accidents across zones, spotlighting the oft-precarious conditions of trains, the infrastructure they need to operate, and the people and goods they transport. In the Kavaraipettai incident, officials said the passenger train received a green signal to enter the main line but it passed into the loop line, rear-ending the goods train. 'Kavach', the Indian Railways' train protection system of choice, is designed to avoid such incidents, and the government can install it across its entire network in a decade with as little as 2% of its annual capex. Of course the effects of its implementation will become clear in a similar span of time, not in a few months as some in the political class are demanding. This said, if the seemingly straightforward causes — due to which a naive decision to reroute a train can turn into the reason for a major accident — are a sign of the precarity of the railway infrastructure, 'Kavach' coverage plus overhauling existing signalling systems should be a national priority but cannot be considered a silver bullet.



The long-standing delay in improving safety could be symptomatic of shortfalls in multiple areas. For example, the staff of the Railways matter for safety, too. Recent media reports have revealed deplorable working conditions for East Coast, Western, and Central Railways locomotive pilots, including 12-hour shifts, unhygienic resting facilities, and absence of toilets on engines. Even with 'Kavach', rail safety will require constant vigilance yet vigil is threatened by access to basic amenities competing for pilots' attention. Overall, the Railways' revenue growth has slowed while its dependence on budgetary allocation for capex has increased; its freight basket is dominated by coal (and thus vulnerable to the pressure on multiple sectors to decarbonise); both high-density routes and high-utilisation routes often report more than 100% network utilisation; and there are signs it has still to recover market share it lost during the COVID-19 pandemic to other passenger services. The Railways cannot improve safety in a vacuum but must address all these stressors in consonance. Finally, the government's response to recent accidents has included counter-terrorism investigators as well. While this is due diligence, their presence and involvement should neither distract India from the Railways' needs nor allow the government to hide behind a veil of secrecy.

DEFENCE MINISTRY SEEKS MORE FUNDS TO EXPAND SCOPE OF IDEX SCHEME

The Ministry of Defence is seeking to expand the scope of its flagship Innovations for Defence Excellence (iDEX) scheme and has sought additional funds from the Finance Ministry to keep it going, The Indian Express has learnt.

For Your Information-

- The Department of Defence Production (DDP) under the Ministry of Defence has already exhausted around 90% of the total Rs 498.78 crore approved for the scheme for a period of five years — from 2021-22 to 2025-26. The iDEX scheme aims to provide financial support to nearly 300 startups, MSMEs and individual innovators and about 20 partner incubators for the development of niche defence and aerospace technologies.
- As per official data, till August this year, procurement of 37 products successfully developed under iDEX worth Rs 2,370 crore have been approved, of which procurement contracts of 21 products worth Rs 800 crore have already been signed. More challenges are being launched under iDEX. As per the data, over 300 of them have been declared iDEX winners.
- An official said the need for additional funds had also been recommended by the Revised Cost Committee (RCC) in 2023 and the process for third-party evaluation of the scheme has already been initiated for completion within the current financial year. Once approved, it will take the total cost of the central sector scheme to around Rs 996 crore.
- Initially, the grant provided to iDEX winners was Rs 1.5 crore, but the iDEX scheme was expanded to iDEX Prime later, with the assistance increasing from Rs 1.5 crore to Rs 10 crore. This is because several stakeholders felt that despite having the capability and the technical knowhow, the ceiling of Rs 1.5 crore was a constraint in developing advanced and complex systems in the niche domain of defence and aerospace.
- Earlier this year, the Defence Minister launched another initiative — the Acing Development of Innovative Technologies with iDEX (ADITI) scheme — to promote innovations in critical and strategic defence technologies under which start-ups are eligible to receive grant-in-aid of up to Rs 25 crore for their research, development and innovation endeavours in defence technology.



- The ADITI scheme worth Rs 750 crore for the period 2023-24 to 2025-26 falls under the iDEX framework and aims to develop about 30 deep-tech critical and strategic technologies in a proposed timeframe, while bridging the gap between the expectations and requirements of the modern Armed Forces and the capabilities of the defence innovation ecosystem.
- As per a government statement, in the first edition of ADITI, 17 challenges – three for the Indian Army, five each for the Navy and the Indian Air Force and four for the Defence Space Agency — were launched. Earlier this month, Singh launched the ADITI 2.0, featuring 19 challenges from the armed forces and allied agencies in the domains of artificial intelligence (AI), quantum technology, military communication, anti-drone systems customised for military platforms and adaptive camouflage among others.

ARMY LOOKS TO HIRE CIVIL CHOPPERS FOR LOGISTICS ON NORTHERN BORDERS

The Indian Army is looking to hire helicopters from civil agencies to carry out a range of jobs along the country's northern borders such as logistics supplies, carrying troops to forward locations and casualty evacuation when needed, The Indian Express has learnt.

For Your Information-

— It plans to deploy these single-engine helicopters in specific sectors in Jammu and Kashmir and Ladakh, such as Drass, Kargil, Batalik, Doda, Kishtwar and Gurez. Barring the specific sectors, the helicopters will be mostly deployed during the winters — from November to April — for stocking of ration, fuel, other stores and operational purposes.

— According to officials, this is a rare instance when the Army will hire **helicopters** for winter stocking, carrying out logistics work and supplies and other operational purposes.

— There are plans for the Armed Forces to increasingly move towards outsourcing of major platforms and equipment instead of buying them — these need massive capital expenditure — and the Army's move to hire the helicopters reflects that.

— It is learnt that the helicopters will be used to fill in for the ageing Chetak and Cheetah fleet with the Army, which continue to face serviceability issues due to their long, extended years of service and the fact that many of them will begin completing their total technical life in the next three years. The Army plans to eventually replace them with the indigenous light utility helicopters.

— The hiring of helicopters will be done under the Delegation of Financial Powers to Defence Services (DFPDS-2021) which was unveiled by Defence Minister Rajnath Singh.

— The DFPDS is the only document which lays out the financial powers of the three services for defence revenue procurements. All defence capital procurements are governed by the Defence Acquisition Procedure 2020.

Do You Know-

— The Army operates the Chetak, Cheetah and variants of the Indigenous Advanced Light Helicopter. It has around 190 Cheetah, Chetak and Cheetal choppers, of which around 25 are under maintenance at any point. These choppers are key for supplies and evacuations, but a majority are over 30 years old.



ARMY TO COMMEMORATE 62 YEARS OF THE BATTLE OF WALONG WITH CHINA

To mark the 62nd anniversary of the iconic Battle of Walong during the 1962 war with China, the Army is planning a month-long series of commemorative events beginning on Thursday. They will continue till November 14. In addition to a series of activities, the newly renovated Walong War Memorial, Shaurya Sthal at Lama Spur, and some key infrastructure projects in the border areas are also set to be inaugurated.

In 1962, the Indian Army halted the advancing People's Liberation Army soldiers for 27 days which forced them to commit their reserve Division from Tawang Sector to Walong as fierce battles unfolded in the unforgiving terrain of Kibithu, Namti Tri Junction (famously known as Tiger's Mouth), Walong, and adjoining features.

In October 1962, as Chinese forces advanced into the eastern most parts of Arunachal Pradesh, the task of defending it fell on the 11 Infantry Brigade under the Second Infantry Division. The Brigade had 6 Kumaon regiment, 4 Sikh regiment, third battalion of 3 Gorkha Rifles, in addition to second battalion of 8 Gorkha Rifles and 4 Dogra.

The Chinese offensive with more than 4,000 soldiers could not breach the forward defences held with 800 men for over 27 days and the Chinese Army was subsequently forced to employ additional division size force of approximately 15,000 soldiers. Vastly outnumbered and with little ammunition and no resources, the Indian soldiers fought till the last man, last round. Capturing this, the Time magazine wrote in January 1963, "At Walong, Indian troops lacked everything. The only thing they did not lack was guts."

This year's commemoration promises a vibrant mix of activities aimed at engaging the local communities and honouring the memory of the fallen heroes, one Army official said. "The events include white water rafting, motorcycle rallies, bicycle rallies, battlefield treks, adventure treks and a half marathon, all designed to reflect the adventurous spirit of the Indian Army in the rugged terrain of Arunachal Pradesh."

NCPCR ASKS GOVT TO ENSURE DISCLAIMERS ON OTTS TO KEEP MINORS OFF ADULT CONTENT

The National Commission for Protection of Child Rights (NCPCR) has written to the Ministry of Information and Broadcasting, asking it to ensure that over-the-top (OTT) platforms display disclaimers in "English, Hindi, and local/regional languages before showing any adult content".

For Your Information-

- The NCPCR's letter to the Ministry dated September 19 came after it convened a meeting in August with representatives of the Indian Cyber Crime Coordination Centre (I4C), and various central ministries to "address the alarming increase among minor children committing crime after watching pornographic content". The letter was also sent to the Ministry of Electronics and Information Technology and the Ministry of Telecommunications, with recommendations for necessary action.
- Section 11 of the POCSO Act refers to actions that constitute sexual harassment of a child, including showing "any object to a child in any form or media for pornographic purposes". The punishment in this case is imprisonment up to three years and a fine. Section 75 of the Juvenile



Justice Act details punishment for cruelty to a child – assaulting, abusing, neglecting, exposing, abandoning the child is punishable by imprisonment up to three years or a fine of Rs 1 lakh or both.

- The NCPCR has also recommended that the Ministry of Electronics and Information Technology ensure that social media platforms “obtain verifiable consent” from parents in accordance with the Digital Personal Data Protection Act 2023. The Act states that before processing any personal data of a child, the data fiduciary shall obtain verifiable consent of the parent or guardian.

CAUVERY AWARDS WORK ONLY DURING GOOD MONSOONS

The Cauvery Water Disputes Tribunal (CWDT)’s prescription of the monthly schedule of the release of water by Karnataka to Tamil Nadu has been a bone of contention since the Tribunal’s interim order in June 1991. Though the CWDT’s final award, delivered in 2007, was modified by the Supreme Court 11 years later to address certain stakeholders’ concerns, the court did not disturb the scheme of the monthly schedule.

Also, considering the growing requirements of Bengaluru city for drinking water, the court awarded an additional 4.75 TMC to Karnataka, along with 10 more TMC. Consequently, Tamil Nadu’s overall allocation went down to 404.25 TMC from 419 TMC, as stipulated in the Tribunal’s final award, and that of Karnataka rose to 284.75 TMC from 270 TMC. Of the total allocation for Tamil Nadu, Karnataka should release water from its reservoirs in such a manner that 177.25 TMC is realised by the lower riparian State annually (June-May) as per the monthly schedule.

The first four months of the water year — June-September or southwest monsoon (SWM) — are crucial for both the principal riparian States of the Cauvery river, Karnataka and Tamil Nadu. It is during the June-September period that the upper riparian State, Karnataka, receives the most rainfall. For Tamil Nadu, these four months account for nearly 70% of the annual quota — 123.1 TMC — of inflows into the State.

This year’s SWM was bountiful for both the riparian States compared to the previous year. Last year, the lack of adequate rainfall led to emotions running high in both States over the lack of water supply for irrigation. This year, however, as the social media handle of the Karnataka State Natural Disaster Monitoring Centre (KSNDMC) revealed, the gross storage of four reservoirs of the Cauvery basin at the end of the monsoon period (September 30) was almost 60% higher than what it was on the corresponding day last year.

In terms of TMC, this year’s storage was about 110.83 TMC against the previous year’s 59.85. This year’s storage amounted to 97% of the gross capacity, 114.57 TMC. Karnataka’s four reservoirs in the basin — Krishnaraja Sagar, Kabini, Hemavathi, and Harangi — received at least 80 TMC more this time compared to the 30-year average of cumulative inflows. According to the KSNDMC, a total of 338 TMC was received by the reservoirs during this year’s SWM. With the bountiful rains and the reservoirs filling up, water supply should not be an issue in the coming months for both agricultural and drinking water purposes in Karnataka.

The story for the lower riparian State, Tamil Nadu also coheres with the above; this year’s figure of Cauvery water realisation exceeded the 200 TMC mark, with nearly 204 TMC released to the State. The receipts are vital as Tamil Nadu’s Cauvery delta relies mainly on water from the upper riparian State during the SWM since the northeast monsoon (NEM) is relatively unpredictable and



erratic in terms of rainfall patterns. This is evident in the way the India Meteorological Department views the NEM — as one of large spatial variations.

The eastern part of the Cauvery Delta, also closer to the coast, receives heavy rainfall many times in November and December, but the rest of the State does not receive this frequency of rainfall.

Considering these factors, the CWDT and the Supreme Court retained the scheme of a monthly schedule for the release of water from the Karnataka reservoirs. This was done to ensure that Tamil Nadu receives the maximum amount of water from June to September. The measurement is done by taking the flow calculated at the Central Water Commission's gauge and discharge site in Biligundlu as the reference point.

The overall water requirement for Tamil Nadu, assessed in the CWDT's report (volume 5, pages 85-86), is 390.85 TMC to provide irrigation to 24.71 lakh acres of cropping land. This figure includes 10 TMC for reservoir losses.

Even though this year's total figure of realisation has crossed the annual share, Tamil Nadu, at meetings of the Cauvery Water Management Authority (CWMA) and Cauvery Water Regulation Committee (CWRC), both of which form part of the implementation mechanism of judicial verdicts, has been contending that Karnataka should stick to the schedule of monthly release and make good any shortfall that arose in June and September.

Data on water release shows that leaving aside the water year 2023-24 when the CMWA and CWRC, at regular intervals, modified the stipulated quantum of water release for a few months, the cumulative realisation during June-September fell short of the prescribed quantity only in two out of six years. Table 1 shows that since 2018, the highest quantity — around 452 TMC — during the southwest monsoon was registered in 2022-23. The lowest was around 45 TMC in 2023-24, going purely by the statistical angle.

Chart 2 showing average figures of realisation month-wise for the SWM since 2018 — the year of the Supreme Court's judgment — reveals that August accounts for about 47% of the season's overall figure. July's share is 27% followed by September at around 23% with June constituting the rest.

This break-up across months is in line with the 42-year-long average figures (1974-75 to 2015-16) worked out by the Central Water Commission (CWC) which calculated August's share at 41%, July - 26%, September - 27% and June - 6%.

WHAT IS WAYANAD'S NEW X-BAND RADAR?

The story so far:

After devastating floods and landslides killed more than 200 people in Kerala's Wayanad district in July 2024, the Union Ministry of Earth Sciences approved an X-band radar to be installed in the district. A torrential downpour triggered the landslide in the valley above Punchirimattom, near the Mundakkai region; its effects were compounded by a massive debris flow triggered by the rains.

How do radars work?

Radar is short for 'radio detection and ranging'. The device uses radio waves to determine the distance, velocity, and physical characteristics of objects around the device. A transmitter emits a

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signal aimed at an object whose characteristics are to be ascertained (in meteorology, this could be a cloud). A part of the emitted signal is echoed by the object back to the device, where a receiver tracks and analyses it.

Weather radar, also known as a Doppler radar, is a common application of this device. The Doppler effect is the change in frequency of sound waves as their source moves towards and away from a listener. In meteorology, Doppler radars can reveal how fast a cloud is moving and in which direction based on how the cloud's relative motion changes the frequency of the radiation striking it.

A pulse-Doppler radar can measure the intensity of, say, rainfall by emitting radiation in pulses and tracking how often they're reflected to the receiver. This way, modern Doppler radars can monitor weather conditions and anticipate new wind patterns, the formation of storms, etc.

What is an X-band radar?

Doppler radar relies on Rayleigh scattering, when the scatterer is much smaller than the wavelength of the radiation. A radar trying to 'see' smaller particles like rain droplets or fog will need to use radiation of lower wavelengths, like in the X-band. An X-band radar is radar that emits radiation in the X-band of the electromagnetic spectrum: 8-12 GHz, corresponding to wavelengths of around 2-4 cm (this is in the microwave part of the spectrum.)

The smaller wavelengths allow the radar to produce images of higher resolution. However, the greater the frequency of some radiation, the faster it will be attenuated. So X-band radars have a relatively shorter range.

In Wayanad, the new radar is expected to be able to monitor the movements of particles, such as soil, to inform landslide warnings. The device will also perform high temporal sampling, that is, rapidly sample its environs, allowing it to spot particle movements happening in shorter spans of time.

How many radars does India have?

The India Meteorological Department (IMD) started using radar for weather applications in the early 1950s. The first indigenously designed and manufactured X-band storm detection radar was installed in 1970 in New Delhi. In 1996, IMD replaced 10 outdated X-band radars with digital X-band radars.

In its X-band radar network, India has both wind-finding and storm-detecting radars, and some with dual capabilities. The country also uses S-band radars (2-4 GHz) for long-range detection. The first S-band cyclone detection radar was installed in Visakhapatnam in 1970 and the first locally made variant was commissioned in Mumbai in 1980.

In September 2024, the Ministry of Earth Sciences said India is set to have 56 additional Doppler radars in a few years. On September 11, the Union Cabinet cleared the ₹2,000-crore 'Mission Mausam' to upgrade meteorological infrastructure in the country. This includes installing up to 60 meteorological radars until 2026 under the Mission's first phase.

Minister of State for Earth Sciences Jitendra Pradhan said in August in Parliament that the government has started the process to procure and install 10 X-band Doppler radars to improve weather forecasting in the northeast States and in Himachal Pradesh's Lahaul and Spiti district.



The initiative to install an X-band radar in Wayanad included installing a C-band radar (4-8 GHz) with an observational range of 250 km in Mangaluru.

What is NISAR?

NASA and the Indian Space Research Organisation (ISRO) are currently developing a satellite called NISAR, short for 'NASA-ISRO Synthetic Aperture Radar'. It will use radar imaging to produce a high-resolution map of the earth's landmasses.

Its payload consists of an L-band radar (1.25 GHz, 24 cm) built by NASA and an S-band radar (3.2 GHz, 9.3 cm) built by ISRO. Together they will track and record changes in the earth's various natural processes. It is currently expected to be launched onboard an ISRO GSLV Mk II rocket in 2025, at a total cost of \$1.5 billion, the bulk of it borne by NASA.

LADAKH AURORAE VALIDATE SPACE WEATHER TRACKING, SCIENTISTS SAY

Ladakh's recent sightings of aurora, marked by reddish or greenish light in the night sky and usually observed in the far-northern regions, is a validation of efforts in space weather monitoring, a team of astrophysicists that predicted the activity about 48-72 hours prior said.

The appearance of intense red-hued rays of light on the night of October 10-11 was the latest in a series of recent auroral sightings. Previous ones occurred on May 11 this year, and in November and May 2023.

All sky cameras operated by the Bengaluru-based Indian Institute of Astrophysics at Hanle and Merak in Ladakh captured the aurorae throughout the night. "The aurora sightings are a validation that we are on the right track. It boosts our confidence to predict extreme weather events in space that can potentially endanger all kinds of satellite-based services on the earth, bringing modern society to a standstill."

While aurorae are known for their scenic beauty, their occurrence in lower-latitude regions such as Ladakh is an indication of heightened solar activity in the form of solar storms, known as coronal mass ejections (CMEs), Mr. Nandi said.

Solar storms periodically occur as the sun's internal dynamo, which creates its magnetic field, intensifies and weakens. This activity cycle typically lasts 11 years. In 2018, a CESSI team that included Mr. Nandi predicted the current solar activity cycle would peak in 2024.

Aurorae are a common sight in the planet's far-north, in countries near or within the Arctic Circle.

WHAT DOES THE GLOBAL HUNGER INDEX 2024 STATE ABOUT INDIA?

The story so far:

The Global Hunger Index for 2024 states that a 'serious' level of hunger is prevalent in India. It ranks India 105th among 127 countries, giving it a score of 27.3. A score below 9.9 indicates low levels of hunger, 10-19.9 moderate, 35-49.9 alarming and above 50 extremely alarming.

What does it state about India?

The score is based on four broad parameters, that is, child stunting (share of children under five with lower height proportional to their age, reflecting chronic undernutrition), undernourishment



(share of population with insufficient caloric intake), child wasting (share of children under five with lower weight proportional to their height) and child mortality (share of children who die before their fifth birthday). The report traced 13.7% of the population to be undernourished, 35.5% of children as stunted, 18.7% of children wasted and 2.9% of children dying before their fifth birthday. As per the survey, India has the highest child wasting rate globally.

However, the analysis states that India has demonstrated “significant political will” to transform the food and nutrition landscape — pointing to the National Food Security Act, Poshan Abhiyan (National Nutrition Mission), PM Garib Kalyan Yojna (PMGKAY) and National Mission for Natural Farming. But the report argues there exists room for improvement. To illustrate a solution, the report points to the co-relation between the poor nutritional status of mothers being transferred onto their children. There exists an ‘intergenerational pattern of undernutrition’ where the factors driving India’s high child wasting rate entail mothers inflicted with insufficient weight gain during pregnancy and low birth weight among infants.

What about India’s GDP growth?

The report states that the relationship between per capita GDP growth and low levels of hunger is “not always direct or guaranteed”. In other words, GDP growth alone does not result in improved food and nutritional security for the entire populace. Thus, the report puts forth the imperative for policies to emphasise pro-poor development alongside addressing social/economic inequalities.

What solutions does it propose?

Broadly, the report proposes a multifaceted approach such as improved access to social safety nets, addressing complementary factors relating to well-being and nutrition, alongside dedicated approaches to assessing and provisioning nutritional needs. The first of the proposed measures entail improved access to safety nets and cash transfers. These, the report states, involve improving access to programs such as the Public Distribution Scheme (PDS), PMGKAY and Integrated Child Development Services (ICDS). Other than this, it proposes investments in agriculture and a holistic food systems approach which promotes diversified, nutritious and ecological food production including nutri-cereals such as millets.

Other dedicated approaches include making effective investments in mother and child health. It recommends a set of factors such as improved water, sanitation and hygiene, among other things. Finally, the report also seeks interventions to consider links between food and nutrition, gender and climate change.

What is the debate about data collection methodology?

The previous year, the Ministry of Women and Child Development had expressed concerns about the data not being accessed from their ICT application ‘Poshan Tracker’. The Ministry pointed out that UNICEF, WHO and the World Bank have acknowledged the tracker as a “game-changer”. It observed child wasting being consistently below 7.2% on a month-on-month basis as compared to the 18.7% stated in the 2023 index. However, researchers have maintained that they use survey estimates that have been vetted for inclusion in the Joint Malnutrition Estimates and/or the WHO Global Database on Child Growth and Malnutrition. It argues that using the same data source ensures that the numbers are produced using comparable methodologies. “Introducing exceptions to this process for any country would compromise the comparability of the results and the ranking,” it states.



'CHARLES CORREA'S DESIGNS WERE ABOUT PEOPLE, CLIMATE'

Termining architecture as sculpture that can be used for human occupation is rather uncommon, but that is what Charles Correa, architect and urban planner, succeeded in doing: he brought life to his structures. The documentary titled Volume Zero played at Z-axis Conference on Saturday threw light on his lifetime's work, in which he kept people and nature in focus.

The sixth conference curated by the Charles Correa Foundation (CCF), 'Conversations with Charles Correa: A critical review on six decades of practice', critically reflected on Correa, his life, and 60 years of his professional career as an architect.

Correa is also known for his understanding of housing needs of the lower-middle class. He is credited with conceiving the idea of Navi Mumbai: he proposed New Bombay (Navi Mumbai) to the government by screening the film City on the Water showing the sufferings of people in Mumbai. The proposal was accepted and he later became Chief Architect for the City And Industrial Development Corporation Of Maharashtra.

THE MANY MYTHS ABOUT PROTEIN DEFICIENCY IN PEOPLE IN INDIA

There are many myths about protein in India, emanating from a sub-optimal understanding of nutrition biology. The first myth is that Indians are protein deficient. However, an analysis of NSS (National Sample Survey) household food intakes showed that the risk of protein deficiency (adjusted for digestible quality) in India was low in adults and non-existent at younger ages. There is another myth that protein is the critical limiting factor for physical growth in infants and children. In fact, infant growth is energy dependent: if they are fed with diverse foods to meet their energy needs, protein will be 'carried' along.

Biology first: since energy and protein coexist in foods, a rational and holistic way to view protein requirement is in terms of the "protein to energy ratio" (PER) in both foods and the requirement. To calculate this, protein is first converted to energy (1 gm protein=4 kcal energy) and then expressed as a ratio of the total energy to get the PER.

Examining the PER requirement is illuminating. For a one-year-old-child, with a protein requirement near 1 gm/kg/day, and a high energy requirement of 80 kcal/kg/day, the PER of the requirement is 5%. The requirement PER rises to about 9% in active adulthood, and up to 12% in the inactive elderly. Thus, in active people, their energy requirements go up and lower their requirement PER. Here, eating diversely to meet the energy requirement will also carry along the required protein. The opposite occurs for older, sedentary people- their energy requirements are low, with consequently higher requirement PER, so they need to eat less but eat higher-protein foods. In the NSS analysis, rural and urban quality-corrected PER of mixed diet intakes was 8% and 9% at all ages up to adults, which is equal to the requirement for adults and well above the 5-7% PER required for infants and children.

What foods should be eaten to meet the requirement PER? After adjusting food proteins for digestibility (breakdown into absorbable amino acids) and amino acid content, the PER of cereals is about 6% (because of low concentrations of essential amino acids like lysine), lentils 18%, milk 20%, egg 30% and lean meat 75%. Other foods like energy-dense fats (oils) and sugar, which have zero protein, have 0% PER. Therefore, a mixed diet with protein foods, but containing fats and sugar, will have a lower PER.



Therefore, in an infant, whose requirement PER is 5%, a mixed diet of cereal (6% PER) and fat/sugar (0% PER) alone will be inadequate. If supplemented with small amounts of lentil or animal protein (egg/meat), the protein content and PER will safely be higher than 5%. In older children's diets, the PER of a cereal-dominant diet will improve with lentils or animal foods like milk/eggs/meat; the latter also offer unique nutrients like vitamin B12 and choline. In adults, as their requirement PER increases, cereals should be progressively reduced and replaced with higher protein-plant (lentils) or (milk/eggs/meat).

Another myth: exercise requires high protein. Muscle protein synthesis increases immediately after exercise, and protein intake is indeed required for this. But energy needs also increase, so a high-quality mixed meal is adequate to meet these immediate needs. Can ever-larger protein intakes (like whey supplements) bulk up muscle synthesis and mass ever higher during gym training or exercise? No. Muscle protein synthesis immediately after exercise has been shown to 'max out' at a post-exercise protein intake of 20g in a normal adult. This is because muscle fibres are enclosed in an inelastic 'bag' called sarcolemma, which cannot expand infinitely. Muscle protein synthesis stops when this bag is full. The Indian 'bag' is also small to begin with.

Final myth: there is no risk of eating too much protein. There are risks of bone resorption and renal disease with high protein intake, but a recent careful study in *Nature Metabolism* gave a value for this upper limit for protein. This dose-response study showed that protein intake beyond 22% PER (25 gm/meal; a usual meal would have about 20 gm protein) negatively affected the white blood cells that were responsible for clearing up cellular debris.

In humans, this is implicated in ischemic cardiovascular disease (angina, heart attack). Those authors correctly said: "...dialling up your protein intake in pursuit of better metabolic health is not a panacea."

It is time to rationalize the claims around rampant protein deficiency in India: we certainly need good protein, but in moderation, natural plant or animal foods have enough. Rely on farms, not pharmacies, for good health.

HOW AIIMS HELPED ELIMINATE ONE OF THE WORLD'S LEADING CAUSES OF BLINDNESS

In 2010, the All-India Institute of Medical Sciences (AIIMS) sent its team to Nicobar islands to cross-check the prevalence of trachoma, a bacterial infection of the eyes which can lead to blindness if left untreated. They found that more than 50 per cent of children had been affected.

"We provided azithromycin to the entire population of Nicobar island for three years. When we did a repeat survey in 2013, we found that 50 per cent cases had been reduced to 6.5 per cent," says Dr Praveen Vashist, head of the community ophthalmology department at AIIMS RP Centre. This intense surveillance and follow-up drill is the reason that India has been able to eliminate trachoma as a public health problem, a fact acknowledged by the World Health Organisation (WHO).

Congratulating India, its director-general, Dr Tedros Adhanom Ghebreyesus, said India's elimination of trachoma as a public health problem is testimony to the country's commitment to alleviating the suffering that millions had faced. "WHO has worked closely with India to realise this achievement, and we congratulate the government, health workers and partners who have collaborated to make it possible," he said.

What is trachoma?

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Trachoma is a bacterial infection of the eyes which happens due to lack of hygiene and an unclean water supply. It is highly communicable and can spread through contact with eye, nose, or throat secretions of an infected person or indirectly via flies. It continues to be a leading infectious cause of blindness worldwide.

Why was trachoma such a challenge in India?

That was because it kept coming back and infecting communities. According to Dr Vashist, trachoma was one of the major causes of blindness in states like Punjab, Rajasthan, Gujarat, Haryana, Western Uttar Pradesh and Delhi in the 1950s. It continued to be so for decades, emerging as the leading cause of blindness in India between 1971 and 1974.

“These states were labelled as hyper endemic states as the prevalence of the infection among children was more than 50 per cent,” says Dr Vashist. However evidence over the next two decades showed a significant reduction in prevalence.

By 2005, trachoma was responsible for just four per cent of all cases of blindness in India. A survey in 2006-2007 found that the prevalence was not as high as reported by the WHO.

That’s when the government decided to conduct a rapid assessment in the previously known hyper-endemic states in India. The districts covered were Hoshiarpur (Punjab), Mahendergarh and Mewat (Haryana), Bikaner, Dholpur and Tonk (Rajasthan), Pauri Garhwal (Uttarakhand), Bulandshahr (Uttar Pradesh), Kutch and Banaskantha (Gujarat).

In 2010 the government received information about the high prevalence of trachoma in Nicobar islands. Given the sporadic return of the disease, “we did surveys from 2014 to 2017 in collaboration with the WHO. We screened around 27 districts and examined more than 1 lakh people in both endemic and non-endemic areas. We found that trachoma had been eliminated in children but as per WHO guidelines, it had not been eliminated in adults,” says Dr Vashist.

More intense and microscopic surveillance and data collection followed and by 2018, the prevalence of trachoma was down to 0.008 per cent. A series of impact, pre-validation and trichiasis-only surveys were completed in 2024, confirming that elimination targets had been met in all previously endemic evaluation units.

A Regional Dossier Review Group thoroughly reviewed a dossier documenting India’s achievement and recommended WHO to validate national elimination of trachoma as a public health problem.

What steps prevented the spread of the disease?

The government adopted strong measures like treatment with antibiotics, surgeries and also micro-level awareness drives on preventive measures like facial cleanliness, maintaining hygiene standards and ensuring availability of clean water.

India also developed a post-validation surveillance plan to ensure sustained impacts of trachoma elimination efforts. Saima Wazed, regional director, WHO South-East Asia Region, says India worked together with partners to ensure effective surveillance, diagnosis and management of active trachoma, provision of surgical services for trichiasis, and promotion of water, sanitation and hygiene, particularly facial cleanliness, among communities to ensure people of all ages can now look towards a trachoma-free future. Initiatives like Swachh Bharat Mission and Jal Jeevan Mission helped eliminate the infection.



What does WHO declaring India trachoma-free mean?

According to Dr JS Titiyal of WHO, it matches the polio-free status that India already has. “The presence of trachoma is indicative of a poor water supply and sanitation facilities, usually associated with challenges of a developing country. With its elimination, we can say that there has been improvement in our public health standards,” he says.

ISSUES IN THE TREATMENT OF ‘RARE DISEASES’, AND WHAT THE GOVT CAN DO

The Delhi High Court last week issued directions aimed at improving the availability of so-called “orphan drugs”, which are medications used to treat “rare diseases” — defined by the World Health Organization (WHO) as a debilitating, lifelong condition that affects 1 or fewer people in 1,000.

Around 55 medical conditions — including Gaucher’s disease, Lysosomal Storage Disorders (LSDs), and certain forms of muscular dystrophy — are classified as rare diseases in India. The National Registry for Rare and Other Inherited Disorders (NRROID) started by the Indian Council of Medical Research (ICMR) has the records of 14,472 rare disease patients in the country.

Therapies are available for less than 5% of rare diseases, leading to less than 1 in 10 patients receiving disease-specific care. Existing treatments are often very expensive. While the Centre provides financial assistance to various Centres of Excellence (CoE) for treatment, stakeholders have gone to court to highlight challenges in accessing funds.

Categories of rare diseases

In India, rare diseases are categorised into three groups based on the nature and complexity of available treatment options.

Group 1 includes diseases that can be treated with a one-time curative procedure. Group 2 diseases require long-term or lifelong treatment which are relatively less costly and have shown documented benefits, but patients need regular check-ups. Group 3 diseases are those for which effective treatments are available, but they are expensive and must often continue lifelong. There are challenges in selecting the right beneficiaries for these treatments.

Current funding policy

In 2021, the National Policy for Rare Diseases (NPRD) was launched, under which financial assistance up to Rs 50 lakh is provided to patients receiving treatment at an identified CoE. The CoEs include AIIMS in Delhi, PGIMER in Chandigarh and the Institute of Postgraduate Medical Education and Research at Kolkata’s SSKM Hospital.

The following year, the Health Ministry opened a Digital Portal for Crowdfunding & Voluntary Donations with information about patients and their rare diseases, the estimated cost of treatment, and bank details of the CoEs. Donors can choose the CoE and patient treatments they wish to support. Each CoE also has its own Rare Disease Fund, which is used with approval from its governing authority.

In August 2024, the government told Parliament that financial assistance of Rs 24 crore had been released to CoEs for treating rare disease patients until August in the current financial year. Before that, Rs 3.15 crore, Rs 34.99 crore, and Rs 74 crore was released in 2021-22, 2022-23, and 2023-



24 respectively. Further, Rs 35 crore has been released for purchasing equipment to improve patient care services.

Cost of orphan drugs

* Many medicines and therapies for rare diseases are patented, which makes them very expensive. The market for these drugs is small and the development costs are high, so pharmaceutical companies often don't find it profitable to produce them, pushing up prices.

* Developing and manufacturing these drugs in India could help bring down prices, but the government will have to offer incentives such as tax breaks to companies.

* Import of rare disease medicines by patients does not attract customs duty, but companies that bring these drugs to India still pay 11% customs duty and 12% GST. Delhi High Court has now set a deadline of 30 days to process the necessary exemptions for these medicines under the customs, GST, and Income Tax laws.

* On January 3, 2019, the Department of Pharmaceuticals under the Union Ministry of Chemicals and Fertilisers issued an order freeing orphan drugs from price controls. The High Court expressed concern over this exemption, saying "the position cannot continue in this manner".

* If treatments or medicines for rare diseases are not available, the government can, under the Patents Act of 1970, allow a third party to manufacture them against payment of a royalty to the patent holder. The government can also acquire patents to ensure the availability of medicines if the patent holder does not provide them. The court said there wasn't enough research and development in the field of rare diseases, and stressed that negotiating with pharma companies and boosting domestic efforts could help lower costs of treatment.

* Delays and red tape in decision making is another problem. The National Rare Diseases Committee meeting in June 2023 discussed the delay in getting approval from the Drug Controller General of India (DCGI) for US-based Sarepta Therapeutics to sell its medicines in India. AIIMS and other CoEs were importing the drugs through distributors for patients, and the delay was impacting treatment.

DOCTORS' STRIKE REVEALS HOW APATHY TO HEALTH PUSHES PEOPLE INTO POVERTY

The rape and murder of a doctor at Kolkata's R.G. Kar Medical College on August 9 brought doctors all over the country onto the streets. As of now, junior doctors in Kolkata have been on a hunger strike for several days, and their peers in other parts of the State have expressed their support with symbolic strikes of their own. Several doctors on hunger strike have had to be hospitalised after their condition deteriorated. The State Government has thus far punished many police and administrative officials.

Even through breaks in the agitation, the health workers have maintained that underlying issues are far from resolved. Their protest has sought, among other things, a complete overhaul of the healthcare system. They have reported working 36-hour shifts on meagre allowances, without proper rest rooms, and have been left vulnerable to violence at their workplace.

These working conditions are not restricted to West Bengal. A report by the Indian Medical Association in 2018 said 75% of doctors in India have at some point been exposed to harassment or physical violence inside health centres or hospitals, largely due to lack of infrastructure,



medicines, long working hours, and excessive political interference. Yet successive governments, both at the Centre and in the States, have swept these pressing issues under the rug.

Issues with insurance coverage

India's declared expenditure on healthcare is only 2% of its GDP, compared to the 5-10% in China and Brazil. The success story of Cuba's healthcare system is rooted in its spending 14% of its GDP on health. In India, continued state-led apathy towards favourable government policies, plus long-standing low-quality healthcare infrastructure, has allowed the private sectors to flourish at the public sector's expense. From 8% in 1950, the private sector captured nearly 70% of India's total healthcare market in 2024.

According to the National Sample Survey, the cost of treatment in private hospitals is seven-times that in government hospitals, yet only 14% of the rural and 19% of the urban populations have health insurance to help cover the resulting costs.

The consequences have been disastrous. Even as India's public sector per-capita expenditure on healthcare has steadily declined, out-of-pocket expenses for individuals have soared. According to official data, of every ₹100 an individual spends on healthcare in India, ₹52 is from savings, while the Central and the relevant State governments together contribute ₹35. To compare, Brazilian and Cuban citizens spend ₹22 and ₹8, respectively, out of their pockets.

A study by IIT Mandi published in December 2023 reported that much-touted government health schemes — including the Centre's Ayushman Bharat Pradhan Mantri Jan Arogya Yojana and West Bengal's 'Swasthya Sathi' — mostly cover treatment costs for inpatient admissions but provide almost no coverage for outpatient services, which account for up to 80% of the total healthcare expenses in India.

West Bengal second-worst

One consequence of this state of affairs has been a corrupt collusion between acquisitive doctors, corporate entities, pharmaceutical companies, and political traders taking advantage of patients desperate for timely and quality care.

In an October 2021 report, NITI Aayog estimated that the exorbitant cost of treatments had pushed nearly 7% of the national population into poverty every year. The situation in West Bengal is more dire considering the State Government's healthcare expenditure is only 1% of its gross state domestic product. According to the Union Ministry of Finance, 68% of healthcare expenses in the State are out-of-pocket — the second-highest in the country, after Uttar Pradesh.

Further, the World Health Organization has recommended that any country's health sector must have at least one doctor for every 1,000 patients. In the last 77 years, India has hardly ever met this goal. The doctor-patient ratio in West Bengal is similar, whereas Kerala has four doctors per 1,000 patients. Then again, this ratio alone does not fully explain the healthcare crisis particular to Bengal.

Need for whistle-blowers

For one, the number of doctors and healthcare workers in rural primary and community health centres is lower than in urban areas. Junior doctors have complained that the State government's claim to have built super-speciality hospitals in different districts is meaningless because there



are too few health workers to staff them and not enough essential medicines and equipment either. Where some equipment is available, their use is held back by the lack of skilled operators.

When freshly-minted doctors are deputed to work in these centres, they are exposed to patients' and their families' frustration over the poor facilities. This reality has persisted irrespective of the party in power. Again, this state of affairs is not unique to West Bengal.

According to the advocacy organisation Transparency International, corruption in healthcare is becoming increasingly severe. Of the \$7.5 trillion spent worldwide on healthcare every year, around \$500 billion is lost to corruption. It also estimated that one in five people is forced to bribe workers and officials to avail medical care and that corruption is responsible for the deaths of 1.4 lakh children annually.

The healthcare syndicates operating in West Bengal's hospitals are a good example of such corruption. As part of its suggested solutions, the Transparency International report asks the sector's stakeholders and employees to come forward as whistleblowers to stem the rot. The junior doctors and others agitating in Kolkata and other cities are currently essaying this role.

Loss due to corruption

Some other West Bengal schemes have also fizzled out. Just as with 'Swasthya Sathi', Bengalis were enthusiastic about the 'Kanyashree' scheme when the State mooted it in 2013 to increase the enrolment of girls in school using conditional cash transfers. But a June 2023 analysis by University of Pennsylvania and University of Kalyani (West Bengal) researchers revealed that although the scheme had prompted more girls to enrol, they were learning little because there were no proper classrooms or teachers. West Bengal, spends less than 3% of the GDP on education even as privatisation in the sector has been increasing since the 1990s.

In a paper published in 2023 in *The Lancet*, two social science researchers reported actual healthcare spending in India has come down to just 1.2% of GDP, even as the Central government has disputed this.

'Bread at the price of jewels'

In sum, this is why it is imperative for India's governments to listen to the junior doctors' complaints and demands. In line with the aspirations of a welfare state, the government must post-haste increase its healthcare spending and demonstrate its commitment to eliminating corruption.

Norman Bethune, a Canadian doctor who devoted his life to serving the poor, travelled around the world and attended to care-seekers during the Spanish Civil War as well as the Sino-Japanese conflict. He eventually died on the battlefield in 1939 when tending to Chinese soldiers. He was critical of the idea of health being treated as a market-commodity and said: "Medicine, as we are practising it, is a luxury trade. We are selling bread at the price of jewels. Let us take the profit, the private economic profit, out of medicine and purify our profession of rapacious individualism. Let us say to the people not 'how much have you got?'"

'EMERGENCY CONTRACEPTIVE PILLS NEED NO PRESCRIPTION'

There is no change in the status quo regarding sales and distribution of emergency contraceptive pill (ECP) brands such as I-Pill or Unwanted-72, says a senior official at the Central Drugs Standard



Control Organisation (CDSCO), adding that there is no recommendation to move it from an over-the-counter drug to a prescription drug.

The CDSCO has denied recent claims about this proposed move, stating that its order has been misinterpreted. Emergency contraceptive pills can prevent pregnancy if taken within 72 hours of unprotected sex. The National Family and Health Survey-5 (2019-2021) revealed that 57% of women users obtained the pills over the counter.

The CDSCO has said that Centchroman and Ethinyloestradiol are under Schedule 'H' of Drugs Rules meaning that they can be sold on doctor's prescription only. Manufacturers will be required to mention caution on the label as "to be sold by retail on the prescription of Registered Medical Practitioner only".

EXPRESS VIEW ON ILLICIT KIDNEY TRAFFICKING: THE BODY SHOP

Over the last decade-and-a-half, several cities in India have become hubs for transplant surgeries of organs such as kidney, liver, heart, eyes, brain and pancreas. Close to 18,000 organ replacement operations are performed annually in the country, the highest after the US and China. The bulk of these procedures take place in the private sector and attract patients from other parts of the world, especially countries in India's neighbourhood. They are a testament to the growing capabilities of the country's healthcare sector. However, along with compassionate donors and efficient surgery teams, the ecosystem is rife with dubious networks of doctors, hospital administrators and organ traffickers, many of whose operations extend beyond India's borders. Last year, for instance, a UK newspaper revealed that a Myanmar-based syndicate had arranged paid kidney donors and got transplants performed in a prominent Delhi hospital by faking documents. Now, an analysis of police records by this newspaper has shone a light on an international kidney transplant racket centred at two prominent hospitals in the NCR. The investigation has revealed an illicit network stretching from Delhi to Dhaka that relied on fudged documents and questionable tie-ups between big hospitals and smaller health firms. The ring seems to have bypassed screenings at the international border.

India's organ transplantation law recognises three kinds of donations: Those by near-relatives, altruistic donations and swap donations when a near relative is medically incompatible with the recipient, the pair is permitted a swap transplant with another related unmatched donor-recipient pair. Foreign nationals must submit a certificate from their country's embassy to confirm that the donation is not driven by money or coercion. Like most illegal organ trading, the India-Bangladesh illicit market seems to have flourished for more than eight years by disguising trafficking as "altruistic donation". The newspaper's analysis shows family trees were fabricated and impoverished donors were lured with Rs 4-5 lakh to part with their kidneys.

Over 1.5 lakh patients in India require an organ transplant every year. Most other developing countries also have a large mismatch between needy patients and organs that can be harvested. Several countries in South and Central Asia and Africa have not developed transplantation capabilities. A section of patients from these regions travel to India for medical care. More alacrity by law enforcement agencies can help address part of the problem. The police have usually been up to the mark in busting illicit rings. However, as this paper's analysis shows, they do not bring this zeal to the criminal investigation. Letting alleged organ dealers off the hook reduces trust in the transplantation system. In the long run, trafficking should be seen as more than a law and order problem. There is an urgent need to increase awareness about organ donation, remove



misconceptions, address skews — women constituting a majority of donors, and men a majority of recipients, for instance.

SPOTTED LOCUSTS INVADE FARMS IN IDUKKI, DESTROY CROPS

The changing climate pattern in the hill district of Kerala poses a threat to its farming sector. Amid the crop loss suffered from incursions by wild animals — and creatures like Malabar parakeets and snails — farmers in Idukki are now reeling under the menace of spotted locust infestation. At Konnathady and Vathikudy grama panchayats, farmers have reported that grasshoppers in large numbers are engulfing their farms, leading to significant crop loss.

“Thousands of grasshoppers arrived from the forests and caused damage. Farms vanished within hours from the grasshopper infestation,” said Ashokan K.K., a farmer in Konnathady.

Mr. Biju said the Agriculture Department had conducted awareness camps for farmers to prevent the infestation and protect their plants.

Crops destroyed

Confirming the infestation, Gavas Ragesh, assistant professor (entomology), Banana Research Station, Kerala Agricultural University, Kannara, said the pests were identified as spotted grasshopper/spotted locust (*Aularches miliaris*), belonging to the insect family Pyrgomorphidae.

“Large numbers of winged adults were found denuding various crops such as banana, coconut, cardamom, vegetables, areca nut, wild plants and Glyricidia and teak trees. Simultaneously paired adults were seen having pre-oviposition feeding on crops, too. The affected crops were severely destroyed, leaving only midribs or partial leaf lamina hanging from the plants, especially in banana, coconut, etc.” said Mr. Ragesh.

“For management, the farmers can plough the field to expose the egg pods laid by the grasshoppers into the soil to harsh sun rays. Farmers may spray neem oil (5 to 10 ml per litre of water) on grasshopper bands or the plants to act as a repellent or feeding deterrent. In emergency conditions as a last resort, farmers may spray insecticides like Lambda-cyhalothrin onto the attacked plants,” he said.

Hit by climate change

According to the expert, the changing climate pattern is the major reason for the infestation.

Climatologist Gopakumar Chalayil said, “The variation of temperature and excess and decline of rainfall also causes various pest attacks. The snail attacks in cardamom plantations and grasshopper attacks in parts of Idukki district are also indications of changing climate pattern. Such climate variations should negatively impact the livelihood of the farming community.”

TIGERS, POLITICS AND THE SEA: THE ADVERSARIES THAT THE PEOPLE OF THE SUNDARBANS FACE DAILY

Sarojini Mondal’s mother stopped eating honey when her father was killed by a tiger. Women in the Sundarbans, in West Bengal, whose husbands are killed in tiger attacks sometimes give up honey, believing that it is ‘blood honey’. Its pursuit took their husbands to the forest, which eventually led to their death.



Almost 40 years later, Sarojini's husband Sambhu Mondal was killed by a tiger in 2019, when he was catching fish. She wondered whether to give up fish.

Saraswati Auliya, 58, did give it up. Her husband, Radhakanta Auliya, was killed by the same tiger when he was out with Sambhu.

No compensation

The others in the fishing party looked for Radhakanta's body, but did not find it. Several days of search did not result in any success.

For five years (2019-2024) the State government denied compensation to both the women, who lost the only earning member of the family, on the grounds that Sambhu and Radhakanta had entered a prohibited area in the Sundarbans Tiger Reserve (STR).

It was only after an order by the Calcutta High Court this year that compensation of ₹5 lakh was given to both Sarojini and Saraswati.

The Indian part of the Sundarbans, spread across 19 blocks of two districts, South 24 Parganas and North 24 Parganas, has small landholdings and limited economic means. Many men migrate for jobs to other States and the women face the adversities of human-tiger conflict, climate and political turmoil.

The Sundarbans is one of the poorest regions of the State, with people having small and diminishing landholdings mostly because of climate change and erosion. About 44% people in the region live below the poverty line and depend on the forests for their livelihood.

"Sometimes the family members of the people who die in tiger attacks do not even inform authorities. They fear harassment as the fishermen do not have the licence to enter the forest," she says.

The STR comprises an area of 1,699 sq. km where there are no human activities, while the 885 sq. km buffer zone allows tourism and fishing in a controlled manner. The buffer area falls under the forested patch of South 24 Parganas and also has a significant number of tigers.

According to the West Bengal Forest Department, the population of tigers has increased in the Sundarbans from 70 in 2010 to 101 in 2022. Between 1985 and 2008, tiger attacks led to 664 deaths and 126 injuries. Experts point out that the number of deaths is five times more than the number of people injured, which indicates the ferocity of the tiger attacks. Fishermen and honey collectors are the most vulnerable.

The people of the Sundarbans have lived with tigers for a few centuries now and the conflict and struggle has become part of the folklore, reflected in its customs, songs, and modes of worship. However, human-tiger conflict is not the only challenge in the Sundarbans.

Weather wars

Home to about 4.5 million people as per the 2011 population Census, most of the region is facing the impact of climate change through rising sea levels and an increased frequency of cyclones in the Bay of Bengal.

About 160 km south-west of Lahiripur, the island of Mousuni is located at the mouth of the Bay of Bengal.



With a population of about 22,073 as per the 2011 Census, the island is spread over 27 sq. km and the biggest challenge the inhabitants face here is sea erosion. The island has also faced the wrath of tropical cyclones such as Amphan (2020), Yash (2021), and Remal (2024).

Despite the challenges, Mousuni has emerged as a tourism destination, with about 62 camps coming up at the mouth of the Bay of Bengal where the rising sea is fast eating up the land. “The tourist camps were set up by 2018. Earlier, there was sand along the beach which acted as a barrier to erosion. With the recent erosion, the sand and mangrove patches have all been washed away,” says Chayan Bhattacharya, husband of Mousuni gram pradhan Manasi Bhattacharya.

He points out that the panchayat does not have resources to arrest river erosion, and since 2021 when the 100 days of work guarantee under MGNREGS stopped, nothing much is being done. There are about 300 families that are directly dependent on the camps for their livelihood and several who reap the economic benefit indirectly.

The camp owners and panchayat functionaries are aware that these erected right on the beach of the ecologically vulnerable island are in complete violation of Coastal Regulation Zone rules. However, people here say the camps provide employment within the area. Amiya Dolui, employed at Sand Castle Beach Camp, worked as a migrant worker in Kerala. He is happy to be locally employed for the past five years.

WULAR’S AUTUMN NIBBLES

Water chestnut, known as goer in Kashmir, is an aquatic vegetable that grows in the Wular Lake, one of the largest freshwater lakes in Asia. The grass-like sedge is in high demand during autumn in Kashmir. For hundreds of families living around the lake in Bandipora district of northern Kashmir, it’s one of the main sources of income in the season.

The harvest typically begins in late September with people from the villages around the lake, both men and women, taking part in the tedious work to pull out the water chestnuts.

They venture into the lake in shikaras and other boats to start the labour-intensive exercise, spending several hours on the lake to collect the chestnuts. The plants have extremely sharp spines with barbs that can cause serious injuries if stepped upon. The villagers make footwear out of long pieces of wood to venture into the marshy areas of the lake.

Many prefer to sell the vegetable on the day of harvest, while others take it home for drying and processing to fetch a better price.

The edible kernel, concealed beneath a thick outer layer, is peeled off, dried, and pounded into flour. People also use the sturdy dried outer shells as fuel in the traditional fire pots known as kangri during winter.

Water chestnut and lotus stem are eaten in dishes during during Navaratri, especially when fasting rituals may not permit the use of grains. They are also easily digestible and provide energy, which is crucial when fasting. When peeled, the chestnut reveals white flesh with a crunchy, juicy texture and a sweet taste.

The trade in water chestnut is mainly handled by the poorer section of society and is not regulated or registered by the government. Despite the challenges, it remains a significant part of the economic activity around the lake, besides tourism and fishing.



Over the years, dry weather and increasing marshy land around the lake caused a decline in production of water chestnuts and have adversely affected livelihoods.

JNU PLANS SHIVAJI CENTRE: LESSONS FROM HIS ERA ON AKHAND BHARAT CONCEPT

The Jawaharlal Nehru University (JNU) is planning to start a 'Centre of Excellence' named after Chhatrapati Shivaji Maharaj, which will draw lessons from his era to understand the "concept of Akhand Bharat" and his "struggle for Hindavi Swaraj", The Indian Express has learnt.

For Your Information-

- According to the NCERT Text Book, Maratha kingdom was established by Chhatrapati Shivaji Maharaj (1630). The Maratha kingdom was another powerful regional kingdom to arise out of a sustained opposition to Mughal rule. Shivaji (1630–1680) carved out a stable kingdom with the support of powerful warrior families (deshmukhs). Groups of highly mobile, peasant-pastoralists (kunbis) provided the backbone of the Maratha army. Shivaji used these forces to challenge the Mughals in the peninsula. After Shivaji's death, effective power in the Maratha state was wielded by a family of Chitpavan Brahmanas who served Shivaji's successors as Peshwa (or principal minister). Poona became the capital of the Maratha kingdom.

- Historian PN Deshpande, in his book, Chhatrapati Shivaji Maharaj (2002), describes the Maratha warrior king's military tactics as strategic and calculated, characterised by sudden raids and persistent assaults that kept his enemies constantly off balance. Despite commanding a smaller army, Shivaji Maharaj consistently outmanoeuvred his adversaries through guerrilla warfare, earning the awe and fear of his opponents. This reputation is reflected in foreign accounts of the Surat raids.

- Akhand Bharat-The Sangh Parivar has long imagined an Indian nation that existed from the time of the Ramayana, covering the landmass stretching from today's Afghanistan to Myanmar and Tibet to Sri Lanka. A map titled "Punjabhoomi Bharat" published by the RSS-run Suruchi Prakashan, labels Afghanistan as "Unganathan", Kabul as "Kubha Nagar", Peshawar as "Purushpur", Multan as "Moolsthan", Tibet as "Trivishtap," Sri Lanka as "Singhaldweep", and Myanmar as "Brahmadesh".

Back in 1944, as the Muslim League pressed for a separate Pakistan, the historian Radha Kumud Mookerji first articulated the idea of Akhand Bharat in his presidential address delivered at an "Akhand Bharat Conference".

"...The homeland of the Hindus through millenniums of their history has been nothing short of the whole of India stretching in its continental expanse from Kashmir to the Cape, from Nanga Parvat and Amarnath to Madura and Rameshwaram and from Dwarka to Puri," Mookerji said.

Akhand Bharat was a fact of geography, he argued: "India has been fashioned by Nature as an indisputable geographical unit marked out from the rest of the world by well-defined boundaries and fixed frontiers about which there can be no doubt or uncertainty."



SHORT NEWS

GRADED RESPONSE ACTION PLAN (GRAP)

- With the Air Quality Index dropping in Delhi, after the Dussehra celebration, Stage 1 of GRAP has been invoked.
- GRAP is a set of emergency measures that kick in to prevent further deterioration of air quality once it reaches a certain threshold in the Delhi-NCR region.
- Stage 1 of GRAP is activated when the AQI is in the 'poor' category (201 to 300), Stage 2 is when it's in the 'Very poor' category (301-400), Stage 3 is when the AQI is the 'Severe' category (401-450) and finally Stage 4 is when it rises to the 'Severe +' category (more than 450).
- The GRAP was first notified in January 2017 by the Ministry of Environment, Forest and Climate Change. This was based on a plan submitted by the Central Pollution Control Board (CPCB) in November 2016.

AI CENTRES OF EXCELLENCE

- The Union Minister for Education has announced the establishment of three AI Centres of Excellence (CoE) focused on Healthcare, Agriculture, and Sustainable Cities in New Delhi.
- The CoES will be led by top educational institutions, in consortium with industry partners and startups.

INTER-PARLIAMENTARY UNION (IPU)

- The 149th Assembly of the IPU took place in Geneva, Switzerland, on 13-17 October 2024.
- The theme is ***Harnessing science, technology, and innovation (STI) for a more peaceful and sustainable future*** and providing a platform for delegates to deliberate, exchange views and galvanize parliamentary action.
- The Indian delegations were led by Lok Sabha Speaker Om Birla.

MULTIDIMENSIONAL POVERTY INDEX

- The 2024 Multidimensional Poverty Index was published on 17th October on the International Day for the Eradication of Poverty by OPHI and the Human Development Report Office of the United Nations Development Programme. It was launched in 2010.
- The five countries with the largest number of people living in poverty are India (234 million), Pakistan (93 million), Ethiopia (86 million), Nigeria (74 million) and the Democratic Republic of the Congo (66 million). Together, these five countries account for nearly half (48.1 percent) of the 1.1 billion poor people.
- The MPI uses 10 indicators covering three main areas: (i) health, (ii) education, and (iii) standard of living. These three dimensions have one-third weight each in the final index.



NEMALINE MYOPATHY

- Recently, Chief Justice DY Chandrachud shared the challenges faced by his foster daughters, who are battling a rare congenital disorder called nemaline myopathy.
- Nemaline myopathy, also known as rod myopathy or nemaline rod myopathy, is a rare congenital disorder that affects the skeletal muscles, causing muscle weakness and other associated symptoms.
- The term “nemaline” comes from the Greek word “nema,” meaning thread-like, referring to the rod-like structures (nemaline bodies) found in the muscle cells of affected individuals.
- One of the primary challenges in diagnosing nemaline myopathy is its rarity. So it can be misdiagnosed as existing muscular disorders. This delay can be costly.

DIPHTHERIA

- A three-year-old girl died of suspected diphtheria in Punjab’s Faridkot last week.
- A toxin produced by some strains of the *Corynebacterium diphtheria* bacteria results in diphtheria. It affects the respiratory tract and spreads throughout the body.
- The common symptoms are fever, chills, swelling in lymph nodes, fatigue, shortness of breath, etc. It is also a highly contagious disease, although fatality rates are low.

MURINE TYPHUS

- A 75-year-old man from Kerala who recently travelled to Vietnam and Cambodia was on Friday (October 11) diagnosed with the bacterial disease murine typhus.
- Murine typhus is an infectious disease caused by the flea-borne bacteria *Rickettsia typhi*.
- It is transmitted to humans through the bites of infected fleas. The disease is also known as endemic typhus, flea-borne typhus or flea-borne spotted fever.
- Rodents like rats, mice and mongoose, are known to be reservoirs of the disease.
- The symptoms usually appear seven to 14 days after the exposure and include fever, headaches, body aches, joint pains, nausea, vomiting, and stomach aches.

SHUBHA TOLE

- Professor Shubha Tole, neuroscientist and dean of graduate studies, Tata Institute of Fundamental Research, Mumbai, is president-elect of the International Brain Research Organisation (IBRO).
- IBRO is a global association of neuroscience societies established in 1961 that aims to promote and support neuroscience around the world through training, education, research, outreach and engagement activities, and the publication of two journals, Neuroscience and IBRO Neuroscience Reports.



JAMNAGAR

- Former cricketer Ajay Jadeja has been declared heir to Jamnagar's royal throne.
- Jamnagar was founded by Jam Rawal in 1540 CE as the capital of the Princely State of Nawanagar. The district is now known as Jamnagar.
- The Ranji Trophy is named after Ranjitsinhji, nawab of Jamnagar, and was started by the Board of Control for Cricket in India (BCCI) in 1934 after his death in 1933.

WILL INITIATE ACTION IN GELEKY FOREST VIOLATION, GOVT TELLS NGT

The construction of a police battalion camp in Assam's Geleky reserved forest was prime facie done without prior approvals of the central government in contravention of the Van (Sanrakshan Evam Samvardhan) Adhiniyam, 1980, the Union Ministry of Environment, Forest and Climate Change has submitted to the National Green Tribunal's (NGT's) eastern bench in an October 1 affidavit.

The ministry also directed its regional office in Shillong to initiate action in the matter under sections 3A and 3B of the Adhiniyam. These sections relate to penalties for contravention of provisions of the forest conservation law and offences by authorities and government departments. Under the Adhiniyam, non-forest work on forest land requires prior approvals.

LUKLA

- Over 1,000 foreign tourists have been stranded in Nepal after bad weather led to the cancellation of flights to Lukla, the gateway to Mt Everest, according to state-run media Tuesday.
- Lukla is a small hill town in Nepal that has the airport nearest to the Mt Everest base camp.
- Lukla Airport was built in 1964 with the help of Sir Edmund Hillary, the first person to summit Mount Everest.

JIGAWA, NIGERIA

- A fuel tanker overturned in Nigeria's state of Jigawa after the driver lost control of the vehicle, spilling petrol which exploded and killed at least 147 people.
- Jigawa is located in northern Nigeria. It was created from the northeastern half of Kano state in 1991.



BUSINESS & ECONOMICS

ARE THE U.S.'S CYBERSECURITY CONCERNS OVER CHINESE ELECTRIC VEHICLES JUSTIFIED?

Modern electric vehicles (EVs) are technological marvels, combining innovation and convenience. Connected tech allows drivers to personalise their driving experience while ensuring better security through advanced algorithms. But as with all technology, the potential for misuse brings about serious concerns.

EVs increasingly rely on connected technologies to enable features such as Advanced Driver Assistance Systems (ADAS), autopilot, auto-park, geo-fencing (a virtual perimeter around a real-world location), and even charging. However, this heavy reliance on software and its vulnerabilities has drawn attention from U.S. officials, particularly concerning Chinese vehicle imports.

In February 2024, the Biden administration launched an investigation into Chinese connected vehicles, many of which rely on these technologies, warning that they could pose national security risks. These vehicles, the administration pointed out, “collect large amounts of sensitive data on their drivers and passengers and regularly use their cameras and sensors to record detailed information on U.S. infrastructure.”

How strong is the global presence of Chinese EVs?

To understand why the U.S. is considering a potential ban on Chinese connected car technology, consider the current global EV market dynamics.

Compared to American brands like Tesla and Rivian, Chinese EV makers have a lead in global sales. Chinese EV manufacturers are expected to generate a collective revenue of \$376.4 billion in 2024, while the global market is projected to reach \$786.2 billion, according to Statista.

Chinese EVs account for around 60% of global EV sales, according to the International Energy Agency. Major players in the Chinese EV market include names such as BYD (Build Your Dreams), Geely, Xiaomi, NIO, Li Auto, and SAIC Motor. These companies owe much of their success to substantial government support, including tax breaks and subsidies — particularly in the case of BYD.

Is Chinese connected car technology a cause for concern?

One major concern is the lack of robust cybersecurity in EV software, which poses significant risks. EVs rely on software to manage virtually every aspect of their functioning — from car performance and locking/unlocking systems to collision prevention. While these features enhance driver safety, they also present serious risks if compromised. Hackers could exploit software vulnerabilities to gain control of vehicle systems, potentially causing collisions or immobilising entire fleets.

There is also a dearth of robust legislation around the collection, storage, transmission, and use of data by automakers.



Is there a threat to user safety?

Poor cybersecurity in EVs makes them easy targets for hackers. Beyond controlling the vehicle, hackers could access sensitive information, including financial data stored on the vehicle's onboard computer. Furthermore, EVs are often integrated with other smart devices — like smartphones and home systems — through IoT platforms. A breach in one system could lead to a broader compromise, granting hackers access to users' personal data, home security systems, or even real-time location. An attack on an EV's software could allow hackers to move laterally through connected systems. For instance, breaching an EV could potentially expose a user's local Wi-Fi network or smart home system, creating a ripple effect of security vulnerabilities.

Is there a threat to critical infrastructure?

EVs are also unique in their connection to power grids for charging, which presents another significant vulnerability. Power grids operate on a delicate balance of energy distribution, and a coordinated cyberattack on EV charging stations could destabilise entire grids. This could cripple energy supplies to major urban centres.

Such attacks are not hypothetical. In 2022, hackers disabled EV charging stations outside Moscow, displaying pro-Ukraine messages in a politically motivated cyberattack. This incident highlighted the potential for nation-state threat actors to target infrastructure by manipulating connected vehicles.

What about attacks by nation states?

Some nation states further exacerbate the problem. Countries like Russia and China are known for their advanced cyber capabilities and motivations. In the case of EVs, nation state actors could exploit software vulnerabilities to infiltrate broader networks, target fleets of vehicles, or compromise critical infrastructure.

A notorious example of nation state cyber activity is the NOBELIUM group, a Russia-linked hacking collective, which executed a supply chain attack by exploiting software vulnerabilities. This attack demonstrated how sophisticated actors could infiltrate tech systems, granting them access to sensitive information by targeting high-profile individuals and companies.

The combination of cybersecurity weaknesses in EVs, coupled with the capabilities of nation-state actors, underscores the significant risks involved in allowing foreign-built connected car technology to operate in critical markets like the U.S.

The concerns raised by the Biden administration are far from unfounded — EV software security is a critical issue that requires urgent attention on a global scale.

DIRECT TAX SHARE UP AT 57 PER CENT OF TOTAL TAX REVENUE, HIGHEST IN 14 YEARS

The contribution of direct taxes to total tax revenue climbed to 56.72 per cent in 2023-24, the highest in 14 years. The surge was even more stark in the direct tax-to-GDP ratio — the share of direct taxes in the overall economic output in the country — which jumped to over a two-decade high of 6.64 per cent, time-series data released by the Central Board of Direct Taxes (CBDT) under the Ministry of Finance showed Thursday.



For Your Information-

- With the direct tax to total tax revenue increasing in FY24 from 54.63 per cent the previous year, the share of indirect taxes to total tax revenue is now down to 43.28 per cent. The last time the share of direct taxes had zoomed higher than the 56.72 level recorded in FY24 was way back in FY10 at 60.78 per cent. A higher share of direct taxes is considered progressive as it is linked to income levels compared to indirect taxes that are levied across the board and so, are considered to impact the poor more than the well-to-do.
- The time-series data reveals another trend — of personal income tax collections surging higher than corporate tax collections for the second year running. Barring FY22, personal income tax collections have been higher than corporate tax collections for the last four years. FY24 was the second year in a row when personal income tax collection at Rs 10.45 lakh crore was higher than corporate tax collection of Rs 9.11 lakh crore.
- This trend marks a reversal from the earlier trend of corporate tax collections being higher than income tax collections before the corporate tax rate cut decision by the government in September 2019, when the corporation tax rate for all existing companies (manufacturing and non-manufacturing) was cut to 22 per cent (without surcharge and cess) from 30 per cent and a tax rate of 15 per cent was announced for newly incorporated domestic companies.
- Tax buoyancy — the growth rate of taxes in relation to the economy's nominal growth rate — grew to 2.12 in 2023-24 from 1.18 in the previous financial year.
- The cost of tax collection — indicating the expenditure on tax collection as a proportion of the total tax collections — inched down to 0.44 per cent in FY24, the lowest level since 2000-01.
- The state-wise breakup of the direct tax data shows that around 39 per cent of the total direct tax revenue comes from Maharashtra (Rs 7.6 lakh crore in FY24), followed by Karnataka with around 12 per cent share (Rs 2.34 lakh crore) and Delhi with 10.4 per cent share (Rs 2.03 lakh crore).

TRADE DEFICIT AT 5-MONTH LOW AS TEXTILE EXPORTS SURGE, GOLD IMPORTS DIP

A MARGINAL increase in exports, driven by textiles, engineering and electronic goods that compensated for lower petroleum exports, alongside a sharp decline in gold imports, helped India's goods trade deficit ease to a five-month low of \$21 billion in September, compared to a ten-month high of \$30 billion in August, official data released on Wednesday showed.

- Amid several geopolitical challenges, India's exports managed to register a slight increase in September, reaching \$35 billion compared to \$34 billion last September.
- In a sharp reversal of trends, India's textile exports recorded a 17 per cent surge in September, as garment orders began shifting partially to India from conflict-hit Bangladesh. Over the last two years, garment and textile exports have struggled due to a slowdown in demand from the West.
- The Federation of Indian Export Organisations (FIEO), said that ongoing international trade disruptions, along with volatility in crude and metal prices, have played a key role in reducing the value of exports.
- The World Trade Organisation (WTO) had earlier this month reduced its growth forecast for the volume of global merchandise trade in 2025 to 3 per cent, down from 3.3 per cent, amid the

4TH FLOOR SHATABDI TOWER, SAKCHI, JAMSHEDPUR



escalating conflict in West Asia, which has blocked the crucial Red Sea shipping route for nearly a year.

- Official data showed that gold imports fell by 60 per cent, from \$10 billion in August to \$4 billion in September, bringing overall goods imports to \$55 billion.
- The Commerce and Industry Ministry, in a statement, said India's top five export destinations in terms of growth in value in September 2024 compared to September 2023 were the Netherlands, the UAE, the US, Brazil, and Japan and the top five import sources, showing growth in value, were the UAE, China, Germany, Japan, and Taiwan.

For Your Information-

- Ready-made garments represent more than 85 per cent of Bangladesh's merchandise exports and over 70 per cent of its total exports. The expectations of a shift in orders to India comes as Dhaka has a bigger share in global trade of clothing at 7.9 per cent compared to New Delhi's 3.2 per cent, according to the World Trade Statistical Review 2023.
- Bangladesh's \$45-billion clothing industry that employs over four million workers was already affected due to the weakening electricity generation infrastructure that was hit by higher input costs following the start of the Russia-Ukraine war and adverse weather events, as per S&P Global.
- The Confederation of Indian Textile Industry (CITI) said that several major global brands that rely on Bangladesh for their sourcing needs are affected by the recent disruptions and that brands with significant portions of their supply chain rooted in Bangladesh may experience delays and a decrease in the availability of their products. "This, in turn, could lead to a ripple effect across the global retail market, affecting inventory levels and sales," CITI said.
- S&P Global Ratings in its ratings report on July 30 had said that Bangladesh's economic growth continues to moderate following two years of fast expansion in 2021 and 2022. As high inflation, rising domestic interest rates, limited access to foreign exchange, and policies aimed at compressing imports continue to bite, domestic demand will likely remain modest in comparison to the long-term trend, the report said.

Do You Know-

- The PLI Scheme for Textiles to promote production of MMF apparel, MMF Fabrics and Products of Technical Textiles in the country to create 60-70 global players, attract fresh investment of Rs. 19,000 crore approximately and generate almost 7.5 lakh new employment opportunities.
- To attract investment for 'Make In India' initiative and to boost employment generation through setting up of 7 (Seven) PM Mega Integrated Textile Region and Apparel (PM MITRA) Parks in Greenfield/Brownfield sites with world class infrastructure including plug and play facility with an outlay of Rs.4445 crore for a period of seven years upto 2027-28.

TAKING GUARD

In a 5:1 majority verdict, the Reserve Bank of India's Monetary Policy Committee (MPC), last week, decided to hold benchmark interest rate at 6.50%, the same level it has been since April 2023. One of the three newly inducted external members in the panel pushed for a 25 basis points (0.25 percentage points) rate cut, perhaps citing the decline in the headline inflation rate below the RBI's median target of 4% in July and August. However, the MPC termed this downward trajectory

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of inflation as slow and uneven, and expected this moderation to reverse from September, as it has, to hit a nine-month high of 5.5%. The panel has not altered its 4.5% projection for retail inflation and its GDP growth estimate of 7.2% through 2024-25, but has reworked the math. In the second quarter or Q2, it expected inflation to average 4.1% instead of 4.4%, but the September number takes it over 4.2%. In Q3, inflation is now expected to average higher at 4.8% from the MPC's August estimate of 4.7%, before easing to 4.2% between January and March 2025. While the MPC has unanimously agreed on switching the monetary policy's hawkish stance to 'neutral', going by these numbers, hopes of a rate cut at the next policy review in December remain slim, especially as the panel has reiterated that it remains "unambiguously" focused on durably aligning inflation to the 4% mark.

While food inflation remains a worry, with vegetable prices spiking again, the central bank Governor Shaktikanta Das has also flagged that core inflation (excluding food and energy costs) has bottomed out. Global oil and metal prices are fresh headaches to fret about, along with the ever-looming threat of climate shocks. Perhaps, if these risks remain only on paper, it is plausible to expect a rate cut in February. It is instructive that the RBI Governor only made a tangential reference to the US Federal Reserve's slashing of interest rates by a sharp 50 basis points last month as a "policy pivot", indicating that domestic trends will determine the bank's approach. But with the European Central Bank likely to cut interest rates too, and U.S. inflation dropping to a three-year low, prompting talk of another rate cut soon, the RBI may have to act faster. Notably, though it remains more bullish than most agencies on India's growth trajectory, there are clear signs of a cooling in economic activity in the first half of this year, with stuttering car sales reflecting weaker urban consumption and industrial output slipping into contraction in August. If the tide does not turn on this front, the MPC, that has vowed to keep supporting growth while reining in inflation, could have an unenviable dilemma on its hands in the coming months.

RUPEE HITS AN ALL-TIME LOW OF 84 AGAINST THE US DOLLAR: FACTORS LEADING TO THE FALL AND THE OUTLOOK

The rupee ended above the 84 per US dollar mark for the first time on Friday, closing at 84.07. The fall in the rupee came amid outflows from foreign institutional investors, concerns over a surge in oil prices and higher demand for the greenback from foreign banks.

How much did the rupee fall?

The domestic currency ended at 84.07 against the US dollar on Friday before dropping to 84.10 during the day. On Thursday, the rupee closed at 83.98 per dollar. Analysts said the rupee has not fallen below 84 as the RBI has been protecting the level for the last two months. On September 12, the local currency had fallen to a record low of 83.99 against the US dollar.

The slide in the rupee was mainly on account of concerns over the rise in crude oil prices, outflows from foreign funds to China and an increase in demand for the US currency from foreign banks.

Why are foreign investors selling?

Foreign portfolio investors (FPIs) have been following a strategy of 'Sell India, Buy China' after the

In the current month (till October 11), FPIs have offloaded Rs 58,711 crore worth of equities and Rs 1,635 crore of debt. The selling in equities from FPIs comes after four consecutive months of buying of local shares. Between June and September, foreign investors bought Rs 1.24 lakh crore of equities, according to the National Securities Depository Ltd (NSDL) data.



USURIOUS PRICING BY NBFCs, APPS: WHY THE RBI ACTED AGAINST 4 ENTITIES AND HOW BORROWERS END UP PAYING EXCESSIVE INTEREST

The Reserve Bank of India (RBI) has barred four non-banking finance companies — Asirvad Micro Finance Ltd promoted by Manappuram Finance, Arohan Financial Services Ltd, Mitsubishi backed DMI Finance and Navi Finserv, founded by former Flipkart founder Sachin Bansal — from sanctioning and disbursing loans for violation of various rules, including charging excessive pricing of loans. The problem runs deep as several NBFCs and lending apps — both legal and illegal ones – are reported as indulging in usurious pricing of loans and recovery methods.

Charges against them

The main complaint against the four lenders is about exorbitant interest charges levied by them. The RBI said its action is based on material supervisory concerns observed in the pricing policy of these companies in terms of their Weighted Average Lending Rate (WALR) and the interest spread charged over their cost of funds, which are found to be excessive and not in adherence with the regulations. The RBI has not prescribed any upper limit on loans but it wants lenders to be transparent in pricing. But this is not followed in letter and spirit by lenders.

The Reserve Bank has been sensitising its regulated entities through various channels on the need to use their regulatory freedom responsibly and ensure fair, reasonable and transparent pricing, especially for small value loans. However, unfair and usurious practices continued to be seen during the course of onsite examinations as well as from the data collected and analysed offsite.

Apart from usurious pricing, NBFCs were variously found to be in non-adherence with the regulatory guidelines on assessment of household income and consideration of existing / proposed monthly repayment obligations in respect of their microfinance loans. Deviations were also observed in respect of Income Recognition & Asset Classification (IR&AC) norms resulting in evergreening of loans, conduct of gold loan portfolio, mandated disclosure requirements on interest rates and fees and outsourcing of core financial services.

Violations despite RBI warnings

There have been complaints about individuals and small businesses falling prey to growing number of unauthorised digital lending platforms and mobile apps on promises of getting loans in quick and hassle-free manner, the regulator said. “These reports also refer to excessive rates of interest and additional hidden charges being demanded from borrowers, adoption of unacceptable and high-handed recovery methods and misuse of agreements to access data on the mobile phones of the borrowers,” the RBI had earlier said.

In September 2022, the RBI came out with guidelines on digital lending aimed at protecting customers from unethical business practices, such as mis-selling, breach of data privacy, unfair business conduct and charging of exorbitant interest rates adopted by digital lenders.

However, multiple reports have highlighted continued presence of unscrupulous players in digital lending who falsely claim their association with RBI regulated entities (REs) and charge excessive interest rates on loans disbursed. Borrowers often end up paying back much more than what's required due to many hidden charges.

Borrowers don't realise the magnitude of interest charges on their loans and they usually go up to 60 per cent and above. As per the guidelines, the regulated entities will have to disclose upfront



the rate charged to the borrower of a digital loan, ensure that borrowers are aware of the products at the time of on-boarding and capture the economic profile of the borrowers before offering the loans.

Predatory loan apps

Thousands of people have fallen prey to predatory loan apps in the absence of proper enforcement of regulations with borrowers even suffering sexual harassment and ending up giving extortion money to loan recovery agents.

On April 16, 2022, The Indian Express had highlighted how a 24-year-old woman was called from 25 different mobile numbers and harassed into paying Rs 4.50 lakh for a loan which she claimed never took.

On May 4, 2022, a 38-year-old salesman Sandeep Korgavkar committed suicide at his residence in Mumbai owing to sexual harassment from loan recovery agents. The agents morphed his photo with a nude person's photo and circulated it to people in his office, locality and to his friends and family members.

Digital loan apps offer loans without much hassles but ask the loanee to give access to their contact list. The harassment for repayment of the loan along with a high interest starts within weeks of securing the loan. As part of the harassment, the loanee is called from multiple numbers and abusive text messages are sent to him and people in their contact list. The loan recovery agents who use only WhatsApp to make the calls and send text messages also send pornographic videos with morphed image of the loanee. The agents end up extorting much more than the loan amount taken by the borrower.

RBI repository

The Reserve Bank of India has now decided to create a public repository of digital lending apps (DLAs) deployed by the regulated entities (REs) in order to aid the customers in verifying the claim of DLAs' association with regulated entities like banks and avoid illegal apps. The repository will be based on data submitted by the REs (without any intervention by the RBI) directly to the repository and will get updated as and when the REs report the details — addition of new DLAs or deletion of any existing DLA. This data will be available on the RBI's website, it said. The repository will enable borrowers in identifying whether the lending app is illegal or legal.

THE \$500 BILLION OPPORTUNITY

Ashish Dhawan, Vinay Ramesh writes: PM's target for electronics manufacturing is ambitious. We must start by reforming regulatory environment in geographically limited areas, building thriving manufacturing regions.

- Recently, Prime Minister Narendra Modi announced a \$500 billion (Rs 4.20 lakh crore) target for electronics manufacturing in India by 2030.
- Growth in electronics manufacturing will help solve India's jobs challenge. For example, the Apple ecosystem alone exports around \$14 billion (Rs 1.17 lakh crore) and employs 1.6 lakh people.
- At the same time, we must recognise that the ambition is audacious — India's entire manufacturing output in 2023-24 was roughly \$660 billion (Rs 55.4 lakh crore).

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For Your Information-

- India's entire manufacturing output in 2023-24 was roughly \$660 billion (Rs 55.4 lakh crore).
- In India, clusters in regions like Sriperumbudur in Tamil Nadu and Noida in Uttar Pradesh have recently been growing fast, and account for nearly 50 per cent of our electronics exports. To sustain and accelerate growth in electronics, we need deep and ambitious region-led reform that can create large, globally competitive electronics manufacturing regions.
- Electronics is the largest manufactured and traded category globally, valued at over \$2 trillion, of which China supplies almost over 50%. However, the wage cost in China is rising fast and buyers are looking to diversify and de-risk their supply chains.
- India has taken the first step to change with the PLI scheme, resulting in electronics exports crossing \$23 billion in FY23. While this is heartening, it is just over 1% of the global electronics trade. Currently, even small countries like Singapore, Vietnam, and Malaysia cumulatively export over \$100 billions of electronics annually.

Do You Know-

- Shenzhen, a Chinese special region, which alone exports around \$350 billion, is 2,000 sq km, while the largest Indian electronics cluster, under the government's Electronics Manufacturing Cluster (EMC) scheme, is 2.5 sq km. Large size helps in co-locating suppliers and buyers, which is important for ecosystem competitiveness. It also helps invest in large, efficient shared industrial infrastructure like effluent plants and testing facilities that lower costs for everyone.
- Electronics factories can employ thousands — the Foxconn factory in Sriperumbudur has 21,000 workers — and it is important to house workers close to factories. Large zones make it possible to have social infrastructure like worker housing, schools, hospitals and recreation facilities.
- Large size and anchor investors alone will not be enough. These regions need a regulatory environment that is conducive to exports and comparable to the best manufacturing regions. The priority would be pro-employment labour laws — allowing longer shifts, globally competitive over-time rules and removing restrictions on employing women, who make up a majority of electronics workers.
- The other key area of customised regulation is taxation and tariffs. Electronics manufacturing requires movement of lakhs of components with designs changing frequently. Extremely specialised supply chain participants mean that much of this movement is cross-border, even in countries with much greater value add. Thus, all our competitors like Vietnam, China, etc., already allow foreign vendors or brands to manage component inventory seamlessly across borders without tax or tariff implications. This has been a big part of their success.

ON THE NEED TO MAKE MORE CONTAINERS TO BOOST TRADE

The story so far:

India's rapid trade growth is planned around the containerised transport of goods. However, there is a key logistical bottleneck. India just does not make enough containers.



How important are containers?

Containers can seamlessly be transported via rail, ship and road. It revolutionised world trade by rapidly cutting transportation time, port delays and so on. It can be said that the untold story of swift trade movements that have enabled globalisation is actually the containerisation of goods. Container boxes are standardised in dimensions and cargo-carrying capacities. Once the cargo is stuffed inside the container and sealed, the boxes can be moved over long distances without any disturbance.

What is the scene in India?

India has sought to increase container handling capacity in various ports to boost exports. Ambitious new ventures such as the Vadhavan and Galathea Bay ports as well as the multimodal India Middle East Europe Economic Corridor are built around containers. India's container market is expected to more than double from 11.4 million TEU (twenty-foot equivalent unit) in 2023 to 26.6 million TEU by 2028.

India manufactures around 10,000 to 30,000 container boxes a year and this production can support only a fraction of the projected doubling. China, in comparison, manufactures 2.5 to 3 million container boxes per year. In India, it takes \$3,500 to \$4,800 to make one container whereas in China it costs \$2,500 and \$3,500. India therefore has to lease the container boxes, mostly from China. All our plans for ramping up trade are put at risk by inadequate container production within India. Moreover, shortage of containers often jacks up freight rates in the country, with congestion at Indian ports also increasing. Indian ports are at a strategic location on the East-West trade route but cannot aspire to be hub ports because of container shortage. As a result, Colombo, Dubai and Hong Kong draw mother ship traffic, not Indian ports. Indian shippers are forced to depend on short distance feeder vessels where the providers of containers do not see much business and profits. This in turn, leads to higher tariff for our shippers.

The crisis in West Asia often casts a shadow on ship traffic through Suez Canal. Circumnavigating Africa lengthens voyages by 10 to 15 days and container availability takes a hit as a result. The Russia-Ukraine war has led to closure of some ports, changes in routes and insurance costs, as well as enhanced container freight rates. Piracy has also increased freight costs. In these conditions, it makes sense to build a large and secure supply of container boxes.

What can the government do?

The government has come up with Make In India initiatives to promote indigenous production of container boxes either in PPP mode between the Container Corporation of India and private players or by directly incentivising private production. Direct subsidy and viability gap funding are two support measures available with the government.

A few more measures can help. A reduction in the charges of repositioning and storing empty containers can help ease the shortage of containers. Enhancing container yard capacities at Indian ports can promote business. The key would be to ensure that when scaled up, the cost of production comes down to global levels. The government has mulled Production Linked Incentives (PLI) but they need to be implemented.

Incentives, including relaxation of GST to the manufacturers of raw materials required for containers will help in reducing input costs of container production. Incentives to Indian shippers using Indian containers and facilitating long-term contracts between shippers and Indian



container manufacturers can build market confidence. Mandating the use of Indian-made containers enhances domestic demand resulting in better prospects for the sector. The development of a tracking and tracing mechanism of containers through a Unified Logistics Interface Platform and Logistics Data Bank by the government can reduce the turnaround time of export containers and ease their shortage.

GREENWASHING GUIDELINES: HOW GOVT IS TACKLING COMPANIES MAKING DUBIOUS CLIMATE-FRIENDLY CLAIMS ABOUT PRODUCTS

Seeking to restrain companies from making false or misleading claims about the environment-friendly nature of their products or services, the Centre on Wednesday released new guidelines that make it mandatory for companies to substantiate their claims with scientific evidence.

The Guidelines for Prevention and Regulation of Greenwashing or Misleading Environment Claims were issued by the Central Consumer Protection Authority (CCPA) which works under the Consumer Affairs Ministry. The move is part of the government's crackdown on misleading advertisements. The new norms would complement the existing Guidelines for Prevention of Misleading Advertisements and Endorsement for Misleading Advertisements, framed in 2022, which deal with false or exaggerated claims in advertisements in general.

What is greenwashing?

Although greenwashing as a term has been used in the limited context of advertising in these guidelines, it has a much broader scope. Greenwashing refers to the growing tendency of companies, organisations or even countries to make dubious or unverifiable claims about their activities, products or services being environment-friendly or climate-friendly. Due to heightened sensitivity to climate change, there is rising pressure on corporations and governments to carry out their activities in a way that causes the least damage to the environment. Many of them also have legal commitments, or targets, to adhere to in this regard.

As a result, companies and governments often make claims that are exaggerated, misleading, or, in some cases, wrong. The 2015 Volkswagen scandal, in which the German car company was found to have been cheating in emissions testing of its supposedly green diesel vehicles, is one of the headline-grabbing examples of greenwashing. Several other big corporations, including Shell, BP, and Coca Cola have faced accusations of greenwashing.

Countries too, are sometimes accused of greenwashing, for example, when they exaggerate their forests' potential to absorb carbon dioxide, and the impact of a new regulation on carbon emissions. Carbon trading mechanisms, an otherwise legitimate exercise, often come under scrutiny because the processes followed in the generation of credits for trade might not be scientifically robust. Similarly, carbon offset practices, in which a carbon-intensive activity such as air travel is sought to be compensated with another activity like planting a certain number of trees, offer ample scope for greenwashing.

Sometimes companies do make genuine mistakes — overestimating the impact of their environment-friendly projects. However, very often they lie, or mislead, and these constitute the more serious cases of greenwashing.

Such unfair practices have become widespread enough that United Nations Secretary-General António Guterres had to call for a zero-tolerance policy for greenwashing a couple of years ago. The UN had also constituted a high-level expert group to suggest measures to curb greenwashing



by non-state entities such as corporations, financial institutions, cities or regions that have net-zero commitments to meet.

The expert group gave several recommendations, including that corporations pursuing net-zero targets must not be allowed to make fresh investments in fossil fuels. It also suggested that corporations must be asked to present short-term emission reduction goals on the path to achieving net-zero, and must bring an end to all activities that lead to deforestation. In addition, the corporations were advised not to use offset mechanisms at the start of their journey to net-zero status.

What are the advertising guidelines for preventing greenwashing?

The mandate of CCPA is to protect consumer interest and therefore, its guidelines are limited to curbing greenwashing in advertisements of products or services. They define greenwashing as “any deceptive or misleading practice” that conceals, omits or hides relevant information, or exaggerates, or makes vague or unsubstantiated environmental claims about the product or service. Use of misleading words, symbols or imagery, emphasizing positive environmental attributes while downplaying or concealing negative aspects would constitute greenwashing, according to the guidelines.

However, they allow the use of “obvious hyperboles” or “puffery”, which is central to the advertising business, if these do not amount to deception or misleading practice.

If a company, for example, makes the statement that its growth is based on “sustainable principles”, it would not be treated as a misleading environmental claim for the purposes of these guidelines. But if the company claims that all its products are manufactured sustainably, then it would be examined for greenwashing, the guidelines said.

Thus, generic terms like “clean”, “green”, “eco-friendly”, “good for planet”, “cruelty-free”, “carbon neutral”, “natural”, “organic”, “sustainable”, or similar other descriptions for a product would be allowed only if the company is able to substantiate these with evidence. The company will also have to use “adequate and accurate” qualifiers and disclosures while advertising such descriptions.

When more technical terms such as “environment impact assessment”, “greenhouse gas emissions”, or “ecological footprint”, are used to advertise a product or service, the companies would be mandated to explain their meaning and implications in a “consumer-friendly” language.

“Specific environmental claims such as compostable, degradable, free-of, sustainability claims, non-toxic, 100 per cent natural, recyclable, refillable, renewable, plastics-free, plastic-positive, climate-positive, net-zero and similar claims must be supported by disclosure about credible certification, reliable scientific evidence, internal verifiable evidence, certificates from statutory or independent third-party verification,” the guidelines say.

The guidelines will apply to all environmental claims made by manufacturers, service providers or traders whose goods, products or services is the subject of an advertisement, or to an advertising agency or endorser whose service is availed for the advertisement of such goods, products or services.

“No person to whom these guidelines apply shall engage in greenwashing and misleading environmental claims,” the guidelines said.



The government began drafting these guidelines in November 2023 when it formed a committee. The committee held three meetings and submitted a draft earlier this year. The government released the draft guidelines, seeking public comments, after which it released the final guidelines.

INDIA NEEDS OVER \$1 TN IN 30 YEARS TO MOVE AWAY FROM COAL MINING: STUDY

- In the next 30 years, India will require more than a trillion dollars, or `84 lakh crore at current rates, to transition away from coal mining and thermal power plants, estimates a first-of-its-kind study by environmental think-tank iForest.
- These costs will largely be required to close mines which produce 1,315 million tonnes per annum of coal cumulatively and to phase out coal-based thermal power plants which have a capacity of 237.2 gigawatts, said the new study.
- The energy transition estimate did not include the investment cost of setting up new green energy plants and infrastructure, which alone is estimated to be in trillions of dollars. It also excluded costs of transitioning for industries such as steel and cement that use coal directly.
- The other associated costs required to move away from the coal-dependent economy will include rehabilitation and repurposing of closed coal lines, using the closed mines for clean energy and crucially, supporting nearly 60 lakh workers who are dependent on the coal economy.
- Green energy costs, accounted for neatly 52 per cent of the total costs, and comprised the cost of building green energy plants, repowering existing thermal power plants through other sources of power and upgradation of the electricity grid.
- About 48 per cent of the transition costs are non-energy costs such as “just transition costs”, which refers to supporting workers and communities dependent on coal to get livelihood alternatives and costs of economic diversification which can create green jobs.

EXPRESS VIEW ON RISE IN MSP: NOT A SMART HIKE

The Narendra Modi government has declared a minimum support price (MSP) of Rs 2,425 per quintal for the 2024-25 wheat crop. That's a Rs 150 increase over last year's Rs 2,275/quintal. The ostensible rationale for the move is wheat stocks in public godowns: These, at 23.78 million tonnes (mt) on October 1, were just a shade above the minimum required level of 20.52 mt and the lowest for this date in all years since 2008, except 2022. But then, rice stocks (inclusive of the derived grain from un-milled paddy), at 38.68 mt, were the highest ever for this time. As both rice and wheat are issued through the public distribution system, depleted stocks of the latter alone cannot be reason for effecting a not-small MSP hike. A second justification may be wholesale wheat prices in Delhi ruling at over Rs 2,800/quintal. But if open market prices are high, that should be incentive enough for farmers to sow more area. Why raise the MSP at all?

Russian wheat is now being exported at around \$240 per tonne. Adding ocean freight and insurance charges will take the landed price in Indian ports to \$280-285 or Rs 23,500-24,000 per tonne. That still works out lower than the latest MSP. MSP increases — these have amounted to Rs 150/quintal each in the last two years, as against an average of Rs 78 in the preceding five years — not only render Indian wheat globally uncompetitive, but also fuel domestic inflationary pressures. Government estimates, incidentally, show record wheat production of 110.55 mt in 2022-23 and 113.29 mt in 2023-24. If despite that — plus a ban on exports since May 2022 and stocking limits imposed on the trade — wheat is wholesaling about 10 per cent higher than a year



ago, it's obvious something isn't adding up. If low stocks and overall availability are concerns, the government should simply allow duty-free imports. With Haryana elections over, there's no political impediment to permitting it.

The more pertinent issue — and this extends to all crops — is a structural one. The focus on MSP takes attention away from improving per-acre yields and reducing cultivation costs, which are the only sustainable means to boost farm incomes. Hiking MSPs of chana, masur and rapeseed-mustard by Rs 210-300/quintal can be a useful signal for farmers to plant more area under pulses and oilseeds; but nothing more. Mustard yields in India are abysmally low, just as they are for wheat outside of Punjab, Haryana and western Uttar Pradesh. There's much more to be done on that front through investment in breeding for higher yields, water and nutrient-use efficiency, heat tolerance, and pest and disease-resistance. Unfortunately, governments have gotten used to thinking short.

SATELLITE SPECTRUM, A HIGH STAKES GAME

The big players interested in the satellite communication sector in India have been divided on the issue of spectrum — whether it should be auctioned or administratively allocated. As per a report in this paper, Reliance Jio had earlier this month written to the Department of Telecommunications and the Telecom Regulatory Authority of India, arguing in favour of auctioning the spectrum. In response to the case being made for an auction, Elon Musk, the owner of Starlink, said in a post on X that it “would be unprecedented, as this spectrum was long designated by the ITU as shared spectrum for satellites”. Satellite spectrum has “no national territorial limits” and is overseen by the International Telecommunications Union. Sunil Mittal, chairperson of Bharti Enterprises, who has a stake in OneWeb, has recently said that in order to service retail customers, firms should buy spectrum and be subject to the same conditions as telecom operators. Bringing some finality to the matter, Jyotiraditya Scindia, Minister of Communications, said a few days ago that spectrum for satellite communications will be administratively allocated. This approach is welcome, and in line with the practice followed globally.

As per The Telecommunications Act 2023 the government can assign spectrum by administrative process for entries listed in the First Schedule. This list of 19 items also includes satellite-based services. In September, the telecom regulator had released a consultation paper titled “Terms and Conditions for the Assignment of Spectrum for Certain Satellite-based Commercial Communication Services”. This had delved into the key issues, and had sought industry inputs on several matters relating to frequency bands/ranges for assignment, rollout obligations, spectrum charges, timelines for processing applications, and on how to address the issue of inefficient spectrum usage, among others.

On the contentious issue of spectrum charges, one option that has been indicated is associating spectrum charges, perhaps in terms of percentage, to the company's adjusted gross revenue (AGR). Another option that has been proposed by some is to also impose an upfront fee which would ensure that only serious players enter the segment. The regulator should now move to provide clarity on these issues in a quick and transparent manner. Considering that the stakes are only going to get bigger — as per Deloitte, India's satellite broadband service market is expected to touch \$1.9 billion by 2030 — the objective should be to ensure a vibrant industry, characterised by healthy competition, not to erect entry barriers.



LIFE & SCIENCE

NASA'S EUROPA CLIPPER SPACECRAFT WILL SCOUR JUPITER MOON FOR THE INGREDIENTS FOR LIFE

Europa Clipper will peer beneath the moon's icy crust where an ocean is thought to be sloshing fairly close to the surface. It won't search for life, but rather determine whether conditions there could support it. Another mission would be needed to flush out any microorganisms lurking there.

"It's a chance for us to explore not a world that might have been habitable billions of years ago, but a world that might be habitable today — right now," said program scientist Curt Niebur.

Its massive solar panels make Clipper the biggest craft built by NASA to investigate another planet. It will take 5 1/2 years to reach Jupiter and will sneak within 16 miles (25 kilometers) of Europa's surface — considerably closer than any other spacecraft. Liftoff is targeted for this month aboard SpaceX's Falcon Heavy rocket from NASA's Kennedy Space Center. Mission cost: \$5.2 billion.

Europa, the superstar among Jupiter's many moons

One of Jupiter's 95 known moons, Europa is almost the size of our own moon. It's encased in an ice sheet estimated to be 10 miles to 15 miles or more (15 kilometers to 24 kilometers) thick. Scientists believe this frozen crust hides an ocean that could be 80 miles (120 kilometers) or more deep. The Hubble Space Telescope has spotted what appear to be geysers erupting from the surface. Discovered by Galileo in 1610, Europa is one of the four so-called Galilean moons of Jupiter, along with Ganymede, Io and Callisto.

Seeking conditions that support life

What type of life might Europa harbor? Besides water, organic compounds are needed for life as we know it, plus an energy source. In Europa's case that could be thermal vents on the ocean floor. Deputy project scientist Bonnie Buratti imagines any life would be primitive like the bacterial life that originated in Earth's deep ocean vents. "We will not know from this mission because we can't see that deep," she said. Unlike missions to Mars where habitability is one of many questions, Clipper's sole job is to establish whether the moon could support life in its ocean or possibly in any pockets of water in the ice.

Supersized spacecraft

When its solar wings and antennas are unfurled, Clipper is about the size of a basketball court — more than 100 feet (30 meters) end to end — and weighs nearly 13,000 pounds (6,000 kilograms). The supersized solar panels are needed because of Jupiter's distance from the sun.

The main body — about the size of a camper — is packed with nine science instruments, including radar that will penetrate the ice, cameras that will map virtually the entire moon and tools to tease out the contents of Europa's surface and tenuous atmosphere. The name harkens to the swift sailing ships of centuries past.

Circling Jupiter to fly by Europa

The roundabout trip to Jupiter will span 1.8 billion miles (3 billion kilometers). For extra oomph, the spacecraft will swing past Mars early next year and then Earth in late 2026. It arrives at Jupiter



in 2030 and begins science work the next year. While orbiting Jupiter, it will cross paths with Europa 49 times. The mission ends in 2034 with a planned crash into Ganymede — Jupiter's biggest moon and the solar system's too.

Europa flybys pose huge radiation risk

There's more radiation around Jupiter than anywhere else in our solar system, besides the sun. Europa passes through Jupiter's bands of radiation as it orbits the gas giant, making it especially menacing for spacecraft. That's why Clipper's electronics are inside a vault with dense aluminum and zinc walls. All this radiation would nix any life on Europa's surface. But it could break down water molecules and, perhaps, release oxygen all the way down into the ocean that could possibly fuel sea life.

Earlier this year, NASA was in a panic that the spacecraft's many transistors might not withstand the intense radiation. But after months of analysis, engineers concluded the mission could proceed as planned.

Other visitors to Jupiter and Europa

NASA's twin Pioneer spacecraft and then two Voyagers swept past Jupiter in the 1970s. The Voyagers provided the first detailed photos of Europa but from quite a distance. NASA's Galileo spacecraft had repeated flybys of the moon during the 1990s, passing as close as 124 miles (200 kilometers). Still in action around Jupiter, NASA's Juno spacecraft has added to Europa's photo album. Arriving at Jupiter a year after Clipper will be the European Space Agency's Juice spacecraft, launched last year.

Ganymede and other possible ocean worlds

Like Europa, Jupiter's jumbo moon Ganymede is thought to host an underground ocean. But its frozen shell is much thicker — possibly 100 miles (160 kilometers) thick — making it tougher to probe the environment below. Callisto's ice sheet may be even thicker, possibly hiding an ocean.

Saturn's moon Enceladus has geysers shooting up, but it's much farther than Jupiter. Ditto for Saturn's moon Titan, also suspected of having a subterranean sea. While no ocean worlds have been confirmed beyond our solar system, scientists believe they're out there — and may even be relatively common.

Messages in a cosmic bottle

Like many robotic explorers before it, Clipper bears messages from Earth. Attached to the electronics vault is a triangular metal plate. On one side is a design labeled "water words" with representations of the word for water in 104 languages. On the opposite side: a poem about the moon by US poet laureate Ada Limon and a silicon chip containing the names of 2.6 million people who signed up to vicariously ride along.

WHY SPACEX 'CATCHING' STARSHIP BOOSTER WITH ROBOTIC ARMS IS SIGNIFICANT

A pair of giant robotic arms caught the more than 70-metre-long first stage booster of SpaceX's Starship on Sunday, bringing Elon Musk's company a step closer to its goal of building a fully and rapidly reusable rocket system.



For Your Information-

- Starship is a two-stage heavy lift vehicle comprising a booster (called Super Heavy), and an upper section (the Starship spacecraft). Together, the rocket system is nearly 120 metres tall, making it the largest rocket ever — taller than even the Saturn V (111 metres), which took Neil Armstrong to the Moon. For perspective, the Qutab Minar is 72.5 m tall, roughly the length of the first stage booster that was caught on Sunday.
- Starship is designed to carry crew or/ and cargo to Earth orbit, the Moon, Mars, and beyond, and once fully operational, can revolutionise space travel.
- Most rocket systems are expendable, meaning they can be used only once. This makes rocket launches quite costly and time-consuming. For decades, engineers have attempted to devise reusable space vehicles — but with limited success. SpaceX is the latest space organisation to want to transcend the limitations of expendable rocket systems, by creating a system that is fully and rapidly reusable. Catching the Super Heavy is a milestone to this end. In future, the company hopes it will be able to rapidly stack a Starship spacecraft back on top of the landed booster, allowing the rocket to launch again, almost immediately.
- Notably, over the years, SpaceX has mastered the process of landing its smaller workhouse rocket, the Falcon 9. That process, however, is very different, with the booster landing on specially-built platforms using landing legs strapped to its side, rather than being caught in mid-air.
- Starship is a key part of SpaceX's plans to send astronauts or/and cargo to celestial bodies. The company wants to use the Starship HLS (Human Landing System) to take NASA astronauts back to the moon by 2026 as a part of the Artemis III mission. SpaceX has received government contracts worth up to around \$4 billion to complete the task, according to a report by CNN. Eventually, SpaceX hopes that Starship will put the first humans on Mars. However, before executing these ambitious plans, the company needs to prove that Starship is safe and reliable, while keeping costs low. Historically, this has been a daunting task for space flight programmes.

CHINESE LAB THAT SEEKS TO CRACK PHYSICS MYSTERY NEARS COMPLETION

A giant sphere 700m underground with thousands of light-detecting tubes will be sealed in a 12-storey cylindrical pool of water in the coming months for an experiment that will shine new light on elusive subatomic particles known as neutrinos.

After years of construction, the \$300-million Jiangmen Underground Neutrino Observatory (JUNO) in China's southern Guangdong province will soon start gathering data on neutrinos, a product of nuclear reactions, to help solve one of the biggest mysteries in particle physics.

Every second, trillions of extremely small neutrinos pass through matter, including the human body. Mid-flight, a neutrino, of which there are three known varieties, could transform into other types. Determining which types are the lightest and the heaviest would offer clues to subatomic processes during the early days of the universe and to explaining why matter is the way it is.

To that end, Chinese physicists and collaborating scientists from all over the world will analyse the data on neutrinos emitted by two nearby Guangdong nuclear power plants for up to six years.



JUNO will also be able to observe neutrinos from the Sun, gaining a real-time view of solar processes. It could also study neutrinos given off by the radioactive decay of uranium and thorium in the earth to better understand mantle convection driving tectonic plates.

Due to go operational in the latter half of 2025, JUNO will outpace the far larger Deep Underground Neutrino Experiment (DUNE) under construction in the U.S.

Institutions collaborating on JUNO hail from locations including France, Germany, Italy, Russia, the U.S., and even self-governed Taiwan, which China claims as part of its territory.

Neutrino observatories are also being constructed in other places. “The one in the U.S. will be six years behind us. And the ones in France and Japan... will be two or three years later than us. So we believe we can get the result of mass hierarchy (of neutrinos) ahead of everybody,” Wang Yifang, chief scientist and project manager of JUNO, said.

So far, real-life neutrino applications remain a distant prospect. Some scientists have mulled the possibility of relaying long-distance messages via neutrinos, which pass through solid matter such as the earth at near light-speed.

Researchers are keeping their distance from politics to focus on the science, although they remain at the mercy of governments providing the funding.

The passage of neutrinos from the two power stations will be logged by JUNO’s 600-tonne spherical detector, which will immediately transmit the data to Beijing electronically. The data will be simultaneously relayed to Russia, France and Italy, where it can be accessed by all of the collaborating institutions, said Cao Jun, JUNO’s deputy manager.

THE ENDGAME

The recent injunction issued by U.S. District Judge James Donato, which forces Google to open up its Android platform to third-party app stores and alternative payment options, marks a critical juncture in the ongoing legal dispute between Alphabet’s subsidiary and Tencent-backed Epic Games. This antitrust lawsuit, which began in 2020, after Google removed Epic’s popular game Fortnite from the Play Store for violating its payment terms, has far-reaching implications for how the Android app ecosystem functions. Epic bypassed Google’s rules by making users pay the publisher directly, triggering the battle. Judge Donato’s ruling, set to take effect in November, orders Google to halt practices that have limited competition, such as paying companies to launch apps exclusively on its marketplace or preinstalling Google Play on new devices. It also mandates Google to allow rival app stores to be featured on its Play Store and for app developers to show alternative payment systems. For three years, this injunction will reshape how Google operates its marketplace, creating space for increased competition in the Android ecosystem. But Google argues that these changes pose risks to user privacy and security and could limit developers’ ability to promote their apps. However, the injunction does allow Google to retain some control over security, but the ruling sends a clear message — it is time for Google to change how it governs the Android app marketplace.

At the core of the battle is the “Google tax,” a 15%-30% commission the company charges app developers for transactions made through apps from Play Store, bringing in billions each year for Google. During the trial, it was revealed that Google had cut special deals with major developers, including Spotify and Tinder-owner Match Group, allowing them to pay lower commissions. This further fuelled claims of unfair practices in the app marketplace. Judge Donato’s injunction is

4TH FLOOR SHATABDI TOWER, SAKCHI, JAMSHEDPUR



about much more than just commissions. It strikes at the heart of how tech giants use their platforms to maintain dominance. By enforcing its payment systems and restricting alternative options, Google has long held disproportionate power over app developers. The ruling, if upheld, could dismantle this dominance. By mandating that Google open its platform to third-party app stores and payment systems, the court seeks to introduce fairness to a market that has been controlled by a single player for too long. For end consumers, the real impact could be felt in the form of lower costs for paid apps and in-app purchases. When developers are no longer subject to Google's hefty commissions, those savings could be passed down to users. Ultimately, this ruling could signal a shift toward more transparent and fairer business practices in the tech industry, and push giants to reconsider how they operate in the global digital economy.

WHAT IS THE NEW 'CLICK-TO-CANCEL' RULE IN US?

The United States' Federal Trade Commission (FTC) will soon implement a "click-to-cancel" rule, which will make it significantly easier for consumers to cancel their subscriptions and memberships, and make companies liable to face civil penalties for complicating the cancellation process.

"Too often, businesses make people jump through endless hoops just to cancel a subscription. The FTC's rule will end these tricks and traps... Nobody should be stuck paying for a service they no longer want," FTC Commission Chair Lina M Khan said. The FTC voted 3-2 to approve the new rule on Wednesday (October 16).

Here is all you need to know about the new rule, and if India too boasts a similar regulation.

What does the new rule say?

According to the FTC press release, sellers will be required to "make it as easy for consumers to cancel their enrollment as it was to sign up". Notably, cancellations will have to be offered through the same medium (online, phone, etc.) people used to sign up, and it shouldn't be overly burdensome.

Some crucial guidelines are as follows:

- Companies cannot require people to talk to a live or virtual representative to cancel if they did not have to do that to sign up;
- Companies cannot charge extra for phone cancellation, and must answer the phone or take a message during normal business hours. If they take a message, companies have to respond promptly;
- For memberships/subscriptions that were originally offered in person, companies cannot mandate an in-person subscription, and have to offer options for cancellation online or on the phone;

To whom will the rule be applicable to? How?

It will apply to "almost all negative option programs in any media" including "prenotification and continuity plans, automatic renewals, and free trial offers, whether the offer appears online, on the phone, or in person."



The FTC defines “negative option” programmes as “companies assuming a customer accepted a service unless they specifically rejected it”. This would include something like a consumer agreeing to a one-week trial, and not cancelling it before being billed for regular membership.

The final rule will provide a legal framework preventing sellers from:

Misrepresenting any material fact made while marketing goods or services with a negative option feature;

Failing to clearly and conspicuously disclose material terms prior to obtaining a consumer’s billing information in connection with a negative option feature;

Failing to obtain a consumer’s express informed consent to the negative option feature before charging the consumer; and

Failing to provide a simple mechanism to cancel the negative option feature and immediately halt charges.

Why was this rule brought in?

The rule is part of the FTC’s ongoing review of its 1973 Negative Option Rule, which the agency is modernising to “to combat unfair or deceptive practices related to subscriptions, memberships, and other recurring-payment programs in an increasingly digital economy where it’s easier than ever for businesses to sign up consumers for their products and services”.

According to the Commission, while negative option marketing programmes are convenient for sellers, the FTC receives thousands of complaints about negative option and recurring subscription practices each year, with the number of complaints steadily rising over the past five years. In 2024, the number of daily complaints rose to nearly 70, up from 42 in 2021.

According to Forbes, the heightened concern around hard-to-cancel subscriptions and memberships has materialised alongside a growing subscription economy, and a spike in subscription prices.

A study conducted in 2022 by Michigan-based C R Research found that 42% of consumers had forgotten they were paying for services they did not use, and that customers generally underestimated the monthly cost of their subscriptions by an average of \$133.

In the past, the FTC has gone after companies like Adobe, Amazon, Brigit, and Planet Fitness for allegedly making consumers’ subscriptions hard to cancel.

No. India does not have any such regulation at the moment.

NO MORE ‘HIBAKUSHA’

It has been 79 years since the two cities of Hiroshima and Nagasaki were pulverised by two atom bombs, ‘Little Boy’ and ‘Fat Man’, dropped by the U.S. Army Air Forces. This remains the only direct attacks on civilian population using nuclear weapons and the after-effects are a horrifying reminder of their destructive and long-lasting effects. The victims of the attacks, in which an estimated 1,50,000 to 2,46,000 people were killed immediately or due to radiation effects by the end of 1945, include survivors who went on to be known as the ‘hibakusha’ (bomb-affected



people). Today, the combined number of 'hibakusha' who are alive is officially 1,06,825, according to Japan's Ministry of Health, Labor and Welfare. Their average age is 85.6 years.

By awarding the Nobel Peace Prize for 2024 to Nihon Hidankyo or the Japan Confederation of Atomic and Hydrogen Bomb Sufferers Organizations, a group formed by hibakusha in 1956, the Norwegian Nobel Committee finally recognised the yeoman efforts taken by the group to improve health and provide medical support to the hibakusha and to strive for the abolition of nuclear weapons, emphasised in their slogan, 'No more hibakusha'.

Pinching his cheek and holding back tears, Hidankyo co-chair Toshiyuki Mimaki said in a press conference in Hiroshima that the award would give a major boost to the efforts to abolish nuclear weapons and also said that it was governments that waged wars and not citizens who yearned for peace. Speaking to presspersons, he said, "Please abolish nuclear weapons while we are still alive. That is the wish of 1,14,000 hibakusha".

In the first decade since August 1945, many survivors had to go through ordeals such as unknown sickness, fatal illness and penury. There was little scope for organisation during the U.S. occupation following Japan's defeat in the Second World War, as the occupying force censored publications that focused on the suffering of the hibakusha. The end of the occupation provided the impetus to organise but the 'Lucky Dragon 5' incident — in which a Japanese tuna-fishing vessel got exposed to radioactive fallout from a U.S. hydrogen bomb test at Bikini Atoll in the Pacific Ocean — and its aftermath acted as a catalyst for the formation of Hidankyo.

Two demands

At the very outset, Hidankyo was able to crystallise two fundamental demands — "the elimination of nuclear weapons" and "relief for the hibakusha". Demands for relief for the hibakusha were directed at the Japanese government, rather than the aggressors, the U.S. because Japanese rights to damages during the war were waived by the San Francisco Peace Treaty signed between Japan and the Allied forces in 1951. Hidankyo also considered its members' sufferings to be a consequence of war pursued by the Imperial Japanese state.

The Japanese government's response was to enact an 'Atomic Bomb Medical Law' in 1957, aimed at improving the "hibakusha's health with state-sponsored check-ups and medical assistance", but it stopped short of alleviating their health concerns or living conditions.

Hidankyo made several trips across the world — including to India as part of the World Social Forum in 2004 — to inform the people about the horror of nuclear weapons and the damage it caused on the hibakusha.

In the 1970s, Hidankyo also engaged in oppositional politics and agitations that increased solidarity and support for it from the public. Over time in Japan, several laws were passed that were focussed on healthcare for the hibakusha, thanks to the activism of Hidankyo. Scholars have averred that the group's long struggle helped pressure the government "to admit its war responsibility" and helped turn the country's political culture towards greater democracy and justice. Yet, despite turning public opinion on nuclear weapons and steadily increasing relief for the hibakusha, Hidankyo could not mould the Japanese government's position on the U.S.'s "nuclear umbrella", which continues to this day.



A NOBEL FOR EXPLAINING WHY NATIONS FAIL

The story so far:

The 2024 Economics Nobel prize was awarded to U.S. economists Daron Acemoglu, Simon Johnson and James A. Robinson on Monday “for studies of how institutions are formed and affect prosperity.” The prize committee credited the winners for enhancing our understanding of the root causes of why countries fail or succeed.

What is their work’s significance?

Why are some countries rich while others are poor is a question that has been debated by economists for a long time now. According to the Nobel committee, the richest 20% of countries in the world today are 30 times richer in terms of average income than the poorest 20%. Ever since the Industrial revolution led to the “Great Divergence” in living standards between the East and the West, various theories have been proposed to explain the huge difference in living standards in rich versus poor countries.

Some blame Western colonialism as the primary reason for the Western world’s prosperity even today. Other scholars have argued that disparities in natural resource endowment explains differences in economic prosperity across countries. Some others have argued that intelligence and even historical accidents could explain a nation’s fate.

The 2024 Nobel laureates, however, have argued that differences in the quality of economic and political institutions is what best explains the divergence in the economic fates of countries. This thesis is most famously elaborated in the 2012 book *Why Nations Fail: The Origins of Power, Prosperity, and Poverty* written by Daron Acemoglu and James A. Robinson, and also in the 2004 paper ‘Institutions as a Fundamental Cause of Long-Run Growth’, written together by all three of this year’s Nobel laureates.

Why is the quality of institutions so important?

According to Douglass North, a Nobel laureate and a pioneer of New Institutional Economics, institutions are the “rules of the game” that define the incentives of human individuals. For example, institutions that stop the state from seizing the property of honest citizens would give ordinary citizens the incentive to work hard without the fear of expropriation and that in turn would lead to general economic prosperity. Institutions that legalise expropriation, on the other hand, would affect individual incentives negatively and cause economic stagnation.

Now, Acemoglu and Johnson argued in their book that institutions can either be “inclusive” or “extractive”. Inclusive institutions are characterised by secure private property rights and democracy while extractive institutions are marked by insecure private property rights and the lack of political freedom. They tried to empirically demonstrate that inclusive institutions lead to long-run economic growth and higher living standards while extractive institutions lead to economic degradation and poverty.

To this end, they studied the kinds of institutions that colonists set up in different colonies and the impact that this had on the long-term economic fate of these colonies. When a colonial power did not want to settle in a certain country for various reasons (such as higher mortality rates due to geography), it set up institutions that were extractive in nature and inimical to long-term economic growth. This may have been the case in India where the British set up institutions that



were mostly devised to plunder resources within a short span of time rather than promote long-term economic growth. But in countries where colonists wanted to settle for the long-run, they set up inclusive institutions that encouraged investment and long-term economic growth over short-term plunder. This may have been the case in the U.S. where the British set up inclusive institutions that promoted long-term economic prosperity.

It should be noted that institutions can also include factors like culture, which influence the more explicit “rules of the game” expressed by political and economic institutions.

Why don't we have more inclusive institutions?

The Nobel laureates have also shed light on why inclusive institutions, which are found to be extremely important for long-term economic growth, have not been adopted by more countries in the world. They attribute this to the different choices that rulers face in their respective countries. When the rulers of a country are able to safely extract sufficient resources for their personal gains through extractive institutions, the laureates argue, they have little reason to bring in political and economic reforms (or inclusive institutions) that can benefit the wider population over the long run. In such cases, extractive institutions may prevail for a really long time as long as the masses do not revolt against the status quo. But if there is a real threat of a popular uprising against extractive institutions, at least some rulers may decide to yield to popular demand and reluctantly set up more inclusive institutions which aid economic growth.

CHRONICLER OF GRIEF

In the time of two wars and little accountability, it should not come as a surprise that the Nobel Prize in Literature for 2024 has gone to South Korean writer Han Kang. Despite her “surprise” at the unexpected award — Chinese avant-garde writer Can Xue was tipped to win — Han Kang’s work is perfectly placed to reflect on situations in life which follow no reason or logic.

At least two of her novels, translated into English, use massacres on unarmed civilians and protesters as backdrops, ensuring the crimes are memorialised and not remain hidden chapters in history. The Swedish Academy hailed the 53-year-old writer “for her intense poetic prose that confronts historical traumas and exposes the fragility of human life”.

Confounded by the question — ‘What is the meaning of being human?’ — Han Kang has explored this existential query in novel after novel, taking on the complex arc of human behaviour from acts of horror to moments of kindness. The “innovator in contemporary prose” has a poetic and experimental style, some would say radical, to convey her anxieties, about women and their struggle to overcome patriarchal mindsets, authoritarianism, violent putdowns, the environment, relationships and social injustices.

In a short interview after the prize, Han Kang told Swedish Academy official Jenny Rydén that readers just discovering her work should start with her 2021 novel *We Do Not Part*. The English translation is slated for an early 2025 release and revolves around the friendship of two women set in the time of the 1948 massacre at Jeju Island.

Past and present

She mentioned another novel *Human Acts*, which uses the massacre of 1980 at Gwangju, where Han Kang was born, as a backdrop to chronicle how the past tells on the present. The academy’s words that “she has a unique awareness of the connections between body and soul, the living and



the dead..." is nowhere more evident than in *Human Acts*, where the soul of a slain student wants to see the faces of his murderers, "to hover above their sleeping eyelids like a guttering flame, to slip inside their dreams... until they hear my voice asking, demanding, why".

The third novel she wished readers would discover is the "personal, autobiographical" novel, *The White Book*, "an elegy" on grief, about a sibling passing away after being alive for only hours. She rounded it off by talking about her most well-known novel, *The Vegetarian*, which won the 2016 Man Booker International Prize, and set off a translation spree of her other works. Expanded into a three-part novel from her short story, *The Fruit of My Woman*, it was first published in Korea in 2007, and found readers in English when it was translated by Deborah Smith in 2015.

The protagonist, Yeong-hye, gives up eating meat, with devastating consequences. There's a violent pushback from her husband, and other members of her family, even as Yeong-hye seeks solace in the plant world as people around her fail to understand her.

For the past several years, Korean literature has been riding the Hallyu or Korean wave with the world falling in love with everything the country offers, from music, cinema, television dramas to food. Singers like Psy ('Gangnam Style', 2012) and bands, including BTS, are household names globally. In the last three years, several writers — Hwang Sok-yong (*Mater 2-10*, translated from the Korean by Sora Kim-Russell and Youngjae Josephine Bae), Cheon Myeong-kwan (*Whale*, translated by Chi-Young Kim), Bora Chung (*Cursed Bunny*, translated by Anton Hur) — have been on Booker lists.

In her post-Nobel Prize interview, Han Kang said she hoped the news "is nice" for Korean literature readers. News agencies reported that Koreans flocked to bookstores to buy her books after the win.

Reuters quoted her father, novelist Han Seung-won, as saying the translation of her novel *The Vegetarian* had led to her winning, first the Man Booker International Prize and now the Nobel Prize. "My daughter's writing is very delicate, beautiful and sad," Han Seung-won said.

BIOLOGY TRANSFORMED

The Nobel Prize in chemistry has been awarded to David Baker for succeeding in the seemingly impossible feat of building new proteins and to Demis Hassabis and John M. Jumper for solving the half-a-century old problem of predicting proteins' complex structures using an artificial intelligence (AI) model called AlphaFold that they developed. It used to take years of painstaking experiments to determine the 3D structure of a protein, which in many cases have only been partially determined. Determining structure is the first and most important step in determining protein function.

In 2018, Hassabis and Jumper achieved an accuracy of 60% in predicting protein structure. In 2020, the AI model's performance was comparable with X-ray crystallography. Though still not perfect, the AI model estimates how correct the structure that has been produced is, allowing researchers to know the reliability of the prediction. The code for the AlphaFold model has been publicly available since 2021, and the AI tool has been used by more than two million people from 190 countries. Baker used his computer software Rosetta to generate new proteins that never existed naturally. Instead of predicting the protein structure based on amino acid sequences, he created new protein structures and used Rosetta to determine the amino acid sequence by searching a database of all known protein structures and looking for short fragments of proteins



that had similarities with the desired structure. Rosetta then optimised these fragments and proposed an amino acid sequence. Like Hassabis and Jumper, Baker too made the code for Rosetta freely available so that researchers can develop the software and find new areas of application.

HOW WILL TECH RESHAPE PROTEIN STUDIES?

The story so far:

The 2024 Nobel Prize for Chemistry was jointly awarded to David Baker for his work on computational protein design and to Demis Hassabis and John Jumper for developing technologies to predict the structure of proteins.

Why are proteins important?

The chemistry prize concerns two areas in the field of protein research: design and structure.

All life (as is known) requires proteins and all proteins are made of amino acids. Proteins are long ribbons in which the 20 different amino acid building blocks can be sequentially arranged to form innumerable combinations. Even if researchers know the sequence of amino acids in a ribbon, the ribbon can twist and fold in an astronomical number of possible shapes for each sequence, thereby making protein structure determination extremely challenging. For instance, if a protein consists of only 100 amino acids, the protein can assume at least 1,047 different 3D structures. Till a few years ago, of the 20,000-odd proteins found in humans, the structure of only a third was partially determined even experimentally.

Amino acids are found in tissues that provide structural support; they are catalysts in biochemical reactions; move molecules across biological membranes; control muscle contraction that lets us move around and have our hearts beat; and help cells communicate to perform their tasks.

What is the protein-folding problem?

A protein has many identities and one of them depends on the arrangement of its amino acids in the three dimensions of space — in other words, its 3D structure. In 1962, University of Cambridge researchers John Kendrew and Max Perutz won the Chemistry Nobel Prize for elucidating the first 3D models of hemoglobin and myoglobin, both proteins, using X-ray crystallography.

One breakthrough arrived in 1969 when scientists found that a protein does not try to bend into different shapes. It somehow knows the shape it needs to have and rapidly folds itself to acquire it. The mysterious nature of this 'knowledge' of the protein is called the protein-folding problem.

By the late 2010s, scientists had worked out the structures of around 1.7 lakh proteins — a large number yet still small compared to the roughly 200 million proteins in nature. This situation changed drastically around 2018.

What is AlphaFold?

Hassabis co-founded DeepMind in 2010 which Google acquired in 2014. Here, Hassabis and his colleagues unveiled AlphaFold in 2018. AlphaFold is a deep-learning model to predict the structures of almost all proteins. DeepMind launched its successor AlphaFold 2 in 2020, when it was able to predict the structure of proteins with an accuracy comparable to that of X-ray crystallography.



Jumper led the work on AlphaFold 3, which can predict the structures of various proteins and how two proteins and/or a protein and another molecule might interact. These models are capable of deducing the 3D shapes of most proteins in a matter of hours. However, they have not been able to say why a protein prefers a particular structure. Scientists have thus said it can help them test their hypotheses; making sense of them is still the task of humans.

As Derek Lowe, a pharmaceutical researcher and author of a column in Science, put it to The Hindu in June 2024, “If the protein folding problem was set to us by God to teach us how to learn molecular interactions from first principles, we cheated.”

What is protein design?

Baker developed tools scientists use to design new proteins with specific shapes and functions. His first notable work was in 2003 when he led a team to create a novel protein and determined its structure using a bespoke computer program they had developed in 1999 called ‘Rosetta’. The researchers compared Rosetta’s output with that obtained from X-ray crystallography studies and found them remarkably similar.

According to the Nobel Committee for Chemistry, “Rosetta was designed to be a general program both for protein structure prediction and design, and it has continuously been developed since its inception, with a large cadre of users and co-developers.”

The ability to design proteins has far-reaching implications. For example, in 2022, Baker’s team developed an antiviral nasal spray to treat COVID-19. At its heart were proteins the team designed using computational methods in the laboratory to stick to vulnerable sites on the viral surface and target the spike protein.

Teams involving Baker have also designed new enzymes to support organic chemistry reactions of commercial value, including the aldol reaction (used to make atorvastatin) and the Diers-Alder reaction (to make vitamin B6). Recently, scientists have been exploring novel protein designs for use as biosensors to monitor, say, blood glucose levels in people with diabetes.

NO INDIAN WORKING IN INDIA HAS WON A SCIENCE NOBEL IN 94 YEARS: HERE’S WHY

It has been 94 years since an Indian won a Nobel Prize in the sciences — Physics, Chemistry or Medicine — while working in India. CV Raman’s Nobel Prize in Physics in 1930 remains the only such honour. Three more Indian-origin scientists have won — Hargovind Khorana in Medicine in 1968, Subrahmanyam Chandrasekhar in Physics in 1983, and Venkatraman Ramakrishnan in Chemistry 2009 — but they did their work outside India and were not Indian citizens when they were honoured.

The lack of success at the Nobel Prizes is often seen as a reflection of the state of Indian science. But other factors are also at play. We take a look.

India’s limitations

Inadequate attention on basic research, low levels of public funding, excessive bureaucracy, lack of incentives and opportunities for private research, and decay of research capabilities in universities are cited as some of the reasons suffocating India’s scientific potential. Few institutions are engaged in cutting edge research, and the number of researchers as a proportion



of population is five times lower than the global average. The pool from which a potential Nobel winner can emerge, thus, is quite small.

Nominated, but didn't win

It is not that there haven't been other contenders for a science Nobel from India. Several scientists have indeed been nominated for these prizes. And at least a few others produced ground-breaking science but were never nominated.

Not anyone can get nominated for a Nobel Prize. Every year, a select group of hundreds to thousands of people — university professors, scientists, past Nobel laureates, and others — are invited to nominate potential candidates. A nomination for a Prize, therefore, means that the nominated scientist has produced Nobel-worthy work at least in the eyes of some respected peers.

Names of nominated candidates are not made public until at least 50 years later. And even this data is updated only periodically, not regularly. The nominations for Physics and Chemistry Prizes are available till 1970 while those for Medicine have been revealed only till 1953.

Among the 35-odd Indians figuring on the nomination lists that have been made public, six were scientists. Meghnad Saha, Homi Bhabha and Satyendra Nath Bose were nominated for the Physics prize, while G N Ramachandran and T Seshadri were nominated for Chemistry. The lone Indian nomination for Medicine or Physiology was Upendranath Brahmachari. All six were nominated multiple times by different nominators. A few British scientists, living and working in India in that period, also figure on the nomination list.

Disappointments

A notable omission is Jagadish Chandra Bose, the first person to have demonstrated wireless communication, way back in 1895. The 1909 Nobel Prize in Physics to Guglielmo Marconi and Ferdinand Braun was in recognition of the exact work that Bose had accomplished earlier than either of them. Bose, who did immensely influential work in plant physiology as well, was never even nominated for the award.

K S Krishnan was another scientist with a compelling case who was never nominated. A student and close collaborator of C V Raman in his laboratory, Krishnan is well acknowledged as the co-discoverer of Raman scattering effect, for which Raman alone was given the Nobel Prize in 1930.

Though the nominations after 1970 have not yet been revealed, at least one Indian scientist is very likely to have been considered for the Prize. CNR Rao's work in solid state chemistry has long been considered worthy of a Nobel, but the honour has eluded him so far.

The most controversial omission of an Indian has been that of ECG Sudarshan, who was overlooked for the prize not once but twice. The Nobel Prizes in Physics, in 1979 and in 2005, were given for work in which the most fundamental contributions had come from Sudarshan. But Sudarshan, who passed away in 2018, had become an American citizen in 1965 and most of his work was accomplished in the United States.

Western dominance in the science Nobels

India is not the only country with an unimpressive record at the Nobel Prizes. Countries with much greater allocation of resources to scientific research, like China or Israel, have a surprisingly low number of Nobel Prizes in sciences. Of the 653 people who have won the Nobel Prize for Physics,



Chemistry or Medicine, more than 150 belong to the Jewish community, an astoundingly high proportion. But Israel, considered the Jewish homeland, has won only four Nobel Prizes in science, all for Chemistry. This despite the fact that Israel figures very high on all the common indicators used to measure a country's capabilities in science and technology, and is recognised globally for its scientific prowess.

Similarly, China, which has four times more researchers per million population than India, whose expenditure on research and development as a share of GDP is at least three times higher than India, and several of whose universities rank in the global top 50, has produced just three Nobel Prize winners in science till now.

South Korea, another scientific powerhouse that fares very well on research indicators, has got none.

The science Nobels have been overwhelmingly dominated by scientists from the United States and Europe, many of whom came from other countries in search of better scientific infrastructure and ecosystem. Only 13 of the 227 winners of Physics Prize, 15 of the 197 winners of Chemistry Prize, and 7 of the 229 winners of the Medicine Prize have come from Asia, Africa or South America. In fact, outside of North America and Europe, there have been only nine countries whose researchers have won a Nobel Prize in sciences. The largest number came from Japan, which has 21 of these.

While there have been occasional complaints of regional or racial bias, there is no denying the fact that the research ecosystem in the United States or Europe has remained unmatched.

China, which has been investing heavily in creating an ecosystem particularly focused on research in new technologies, like clean energy, quantum and artificial intelligence, might see its fortunes turning soon. India, meanwhile, is lagging way behind countries like China, South Korea or Israel in building scientific capabilities or allocating resources for research. In the absence of a strong ecosystem and support for scientific research, India's chances of winning more Nobel Prizes in science would remain dependent on the individual brilliance of its scientists.

For Your Information:

— On July 23, 2024, Finance Minister Nirmala Sitharaman's announcement of operationalising the Anusandhan National Research Foundation (ANRF), a move that was five years in the making since its first mention, was a pivotal moment for India's research ecosystem.

— Established under the ANRF Act, 2023, the foundation aims to fund, coordinate, and promote research across India's universities and colleges, which have long suffered from a lack of infrastructure, particularly in state-run institutions. This initiative is a crucial step in pushing India towards becoming a knowledge-driven society, following the model of research powerhouses like the US, Germany, South Korea, and Israel. One of the primary goals of ANRF is to address the infrastructure gap in state and central universities, where 95 per cent of students are enrolled but research capabilities are often non-existent.

MONTE CARLO METHOD: RANDOM TO REAL

WHAT IS IT?

The Monte Carlo method is a type of algorithm that reveals a distribution by randomly sampling its elements again and again. For example, say there are 40 red marbles, 20 green marbles, 25



orange marbles, and 15 blue marbles in a bag. The bag is opaque and has a narrow opening; you dip your hand inside and pick up five marbles at random, note down their colours, and put them back. The Monte Carlo method is based on the idea that by repeating this process over and over again, you will develop a better idea of the marbles' colour distribution. The more times you randomly sample the marbles, the better your estimate.

Monte Carlo methods are frequently used to estimate the odds of an event occurring when doing so by other means is too difficult. If a sample is very complicated — e.g. the billions of particles produced during an experiment at the Large Hadron Collider — a Monte Carlo algorithm itself will require a lot of computing power. But its great advantage is that computers can sample and record multiple samples in parallel, keeping the power demand lower than other methods.

Such algorithms have applications in aerodynamics, power plant design, quantum mechanics, several areas of engineering, computer graphics, artificial intelligence models, and risk-estimating in finance. The method is named for a casino in Monaco, where Polish physicist Stanislaw Ulam was inspired by the way his uncle gambled to come up with the idea.

WHY MOTION OR HEIGHT UNSETTLES YOU

Q. What induces vomiting when we travel or look down from a height?

A: Giddiness occurs when we lose our sense of balance. Sensations perceived by the eye, the inner ear, the skin, the muscles, and joints help the body to know whether it is stable.

Several unusual situations, such as travelling in a bus or looking down from a great height, overstimulate and confuse the part of the brain that controls balancing. This part is close to the part that induces vomiting.

When we look down from a great height, abnormal visual signs are transmitted to the brain without any corresponding information from other parts of the body.

Likewise, while looking out in a fixed direction while travelling in a bus, the eye sends rapidly changing visual signals to the brain. Such signals confuse the mechanism in the brain, leading to giddiness and vomiting.

TOOTHBRUSH, SHOWERHEAD ARE BREEDING PLACES FOR VIRUSES

A study by Northwestern University researchers has found that showerheads and toothbrushes are teeming with an extremely diverse collection of viruses — most of which have never been seen before. Although this might sound ominous, the good news is these viruses don't target people. They target bacteria.

The microorganisms collected in the study are bacteriophage, or "phage," a type of virus that infects and replicates inside of bacteria. Although researchers know little about them, phage recently has garnered attention for their potential use in treating antibiotic-resistant bacterial infections. The previously unknown viruses lurking in our bathrooms could become a treasure trove of materials for exploring those applications. The study was published in the journal *Frontiers in Microbiomes*.



LOCAL INTERVENTIONS BRING HOPE IN THE FIGHT AGAINST SICKLE CELL ANAEMIA IN CHHATTISGARH

Sickle cell anaemia, or sickle cell disease (SCD), is a genetic disorder that causes red blood cells to become rigid and sickle-shaped, which can block blood flow and lead to health complications.

Over 62% of the Jashpur district's population is constituted by two communities — Pahadi Korva and Birhor, categorised as particularly vulnerable tribal groups (PVTGs). With SCD or its trait often carried by people from rural and impoverished backgrounds, the PVTGs were the main reason why Jashpur became the first district in the State to screen more than its targeted population of 6,93,393 under 40 years for SCD. The district authorities screened 7,30,110 people out of the total population of 9,54,561 (2011 Census). While 5,873 people were found with sickle cell trait, 507 were diagnosed with SCD, of which 270 were women.

According to official data, 179 of those suffering from SCD are undergoing treatment with hydroxyurea, a drug that reduces the need for blood transfusion. The Chhattisgarh government undertook large-scale screening in other districts too. A recent official statement stated, "Against the targeted 1,77,69,535 screenings in 33 districts of Chhattisgarh, 1,11,06,561 have been done. During the process, 2,90,663 carriers were found and 22,672 diagnosed with the disease."

Officials said the "unprecedented mass exercise" would help the government maintain periodic data and document its battle against SCD.

The Surguja model

Chhattisgarh's Surguja district, adjoining Jashpur, designed a strategy to combat SCD a year before Prime Minister Narendra Modi launched the National Sickle Cell Anaemia Elimination Mission at Shahdol in Madhya Pradesh in 2023. The national programme was aimed at making India SCD-free by 2047.

The Jashpur administration adopted the Surguja model to take healthcare services to the last mile and introduce peer-supported patient networks to tackle SCD. It also roped in Sangwari, an NGO that has been coordinating with the Surguja administration for sickle cell management.

"While there are no national studies to estimate the number of patients, a field study near Raipur suggests there is at least one or at most three SCD patients per 1,000 people in Chhattisgarh. This translates into 30,000 patients among 3 crore people," says Dr. Yogesh Kalkonde, a public health expert linked with Sangwari.

A team from the NGO has been working in Jashpur since May, acting as a bridge between the government and patients.

"On the one hand, we have to actively dissuade carriers from getting married [to other carriers], but on the other, we have to create awareness among healthy people that they can marry carriers."

Most patients who come for counselling are from the Other Backward Classes, Scheduled Castes, or Scheduled Tribes, lending credence to claims that SCD predominantly affects marginalised groups. A staff nurse at the CHC, however, points out that this could also be due to Bagicha development block's demographics. Later, during a visit to the district hospital, it becomes clear that SCD is not limited to vulnerable groups.



Shortcomings also exist in the health system. A critical gap is the unavailability of reagents for blood solubility tests, a crucial confirmation test post-screening, at both the CHC and the district hospital. Such gaps result in delayed diagnosis and treatment.

Call for quick action

Jashpur District Collector Ravi Mittal acknowledges the challenges but emphasises the need for quick action. “Sickle cell anaemia remains undetected especially among remote communities in a district like Jashpur. This increases the chances of transmission and lack of treatment. We wanted to complete screening fast to gauge the problem’s extent, ensure marriage counselling, and provide personalised support to patients and carriers. Challenges of resources remain, but a multi-pronged strategy involving patients and the larger community will help optimise existing infrastructure and produce better results,” he says.

SCIENTISTS ARE WORKING ON A WAY TO DETECT CANCER WITH SOUND WAVES

Scientists have developed a new technique to detect cancers. The method uses ultrasound to turn a small part of our body’s tissue into droplets that are released into the blood. These bubbles contain molecules like RNA, DNA, and proteins that allow the scientists to identify particular types of cancer.

Break-off, blood, biomarker

Doctors have been using ultrasound to take pictures of internal organs. The technology converts the sound waves reflected by surfaces inside the body to an image, just the way bats use ultrasound to sense their surroundings.

This said, the gold standard to detect many cancers is a biopsy. Doctors extract a small piece of tissue or cells using a large needle from the part of the body where cancer is suspected to be present. In vitro tests can confirm if the tissue or cells are cancerous and, if so, what kind of cancer it is.

Now, Zemp and his colleagues at the university are figuring out a way to use ultrasound to perhaps someday replace biopsies, which are cumbersome, painful, and potentially injurious. They have found that high-energy ultrasound (at frequencies greater than those used in ultrasound scans) can break off a small piece of cancerous tissue into droplets and release their contents into the bloodstream. The team could then test the blood for biomarkers — certain biomolecules like DNA, RNA, or proteins — specific to cancer.

He estimated the technique could help clinicians avoid nearly half of all biopsies.

OROV VIRUS IN SEMEN 16 DAYS AFTER SYMPTOM ONSET

A study published in the U.S. CDC’s journal Emerging Infectious Diseases has found evidence for prolonged shedding of the Oropouche virus (OROV) in a person who had recently travelled to Cuba. The virus was found in blood, serum, and urine, samples, and virus replication was seen in semen samples collected on day 16 after symptom onset. While the researchers detected virus shedding at higher levels in semen than in urine and blood on day 32, they were not able to demonstrate replication competence of the virus collected on day 32. OROV virus is spread mainly by biting midges and *Culex quinquefasciatus* mosquitoes.



Men infected with Zika virus are advised to refrain from indulging in unprotected sex for three months from the date of symptom onset. Similarly, based on the presence of OROV virus RNA that is replication-competent in semen samples, researchers caution that the findings raise concerns over the potential for person-to-person transmission of OROV via sexual encounters. “Pending further evidence (e.g., longitudinal studies to establish the frequency and kinetics of infectious OROV shedding in semen to assess its clinical relevance), we recommend use of barrier protection when engaging in sexual intercourse if OROV is confirmed or suspected,” they caution.

GUT-BRAIN CONNECTION TO PARKINSON’S REVEALED

Is there a gut-brain connection in Parkinson’s Disease (PD)? Recent research suggests a “gut-first hypothesis” or a gut-brain connection in PD — a pathway that could mark a significant shift in how the neurodegenerative disorder is looked at, its diagnosis, its progression, and its treatment.

A recent study — Upper Gastrointestinal (GI) Mucosal Damage (MD) and Subsequent Risk of Parkinson Disease — published in the JAMA Network Open found that a history of upper GI MD was associated with an increased risk of developing PD. The cohort study of 9,350 patients with no prior history of PD found that mucosal damage on upper endoscopy was associated with a 76% greater risk of a PD diagnosis.

Prabash Prabhakaran, head of department and senior consultant, Neurology, Apollo Speciality Hospitals, Vanagaram, says, “PD is a progressive neurodegenerative disorder primarily characterised by motor symptoms such as tremors, rigidity, bradykinesia, or slow movement, and postural instability. As the disease progresses, non-motor symptoms like cognitive decline, sleep disturbances, mood disorders often emerge. However increasing evidence has pointed to an overlooked aspect of PD disease — the gut. Studies suggest that gastrointestinal dysfunction may precede the onset of motor symptoms, highlighting a complex interplay between the gut and brain in PD. There are multiple studies looking at the connection between PD and the enteric nervous system, appendix, gut microbiome, gastritis at an early age, and PD in later life.”

Gastric warnings

One of the key indicators of a link between the gut and PD is gastrointestinal symptoms, particularly constipation, long before classic motor symptoms manifest. Many patients report experiencing constipation, reduced gut motility, and other GI disturbances up to 20 years prior to receiving a PD diagnosis. This suggests that Parkinson’s may not only be a brain disorder but also involve dysfunction in the GI system, he added. “So the present understanding is that PD pathology could probably start in the gut and move to the brain,” Dr. Prabhakaran said.

R. Lakshmi Narasimhan, professor and head of department, Neurology, Sri Ramachandra Medical College, SRIHER, said the deficiency of an essential element like dopamine is associated with PD. High levels of dopaminergic neurons are present in the gut. “Now, several studies are looking at gut microbiota that play a crucial role in deciding your mood and have a great influence on the brain. Previously, research looked at the central and peripheral nervous systems for PD, while now, more research is looking at the enteric nervous system —gastrointestinal-related — to look at the relationship between gut and brain,” he said.

A major breakthrough in understanding the gut’s involvement came with the discovery of abnormal protein aggregates known as Lewy bodies in both the brain and the gut of PD patients, Dr. Prabhakaran said. “The gut microbiome is involved in numerous bodily processes, including



immune function, metabolism, and regulation of gut-brain axis. Dysbiosis, or an imbalance in gut microbiota, has been implicated in neurological conditions, including PD,” he said.

Gut hygiene

A. Chezhian, associate professor of gastroenterology, Government Kilpauk Medical College Hospital, said that it was a long-known fact that GI problems could heighten the risk of PD. “This study has put the magnitude of the problem to be as high as 76%. There is a gut-brain axis in our body that is bidirectional. It is very much affected by the composition of our gut microbiota, which is the healthy gut microbes. Commonly, dietary habits such as increased intake of ultra processed food, antibiotic misuse, and frequent GI infections, affect the gut microbiota. That may set the precedence for so many diseases like PD and even many cancers,” he explained.

“We need to maintain good gut hygiene by avoiding unnecessary antibiotics and less processed food options. Hand hygiene, safe water, and eating home cooked food also promote gut hygiene. Healthy habits such as an early dinner and more fibre from fruits and vegetables are also important,” he said. He added that fecal microbiota transplantation is the way forward for many diseases, but as of now, this is still at the research stage.

CAN STEM CELLS ‘CURE’ DIABETES? LESSONS FROM TWO TRIALS

The most exciting news in the world of diabetes this year has been the successful use of stem cells to “cure” diabetes. Just last month, a patient with Type 1 diabetes was reported to be insulin-free a year after stem cell transplant. Another study earlier this year showed similar success in a patient with Type 2 diabetes, which is possibly an even bigger feat. Both these reports came from China, although from different groups.

Type 2 diabetes is caused by a combination of resistance to insulin and insulin deficiency, occurs more commonly in adults, and comprises;90 per cent of all cases of diabetes (>10 crore are affected in India alone). Type 1 diabetes, on the other hand has a different genesis where autoimmunity/antibodies attack the pancreas leading to destruction of insulin- producing beta cells.

MANY APPROACHES TO RESTORE INSULIN SECRETION

For this, scientists tried out pancreatic transplant, islet cell transplant or stem cell transplant. Islet cells in the pancreas are composed of beta cells that produce insulin and alpha cells that produce glucagon. Although islet transplants can restore insulin secretion, there aren’t enough donors and they require the use of immune-suppressing drugs to prevent the body from rejecting the donor tissue.

Stem cells are a special type of cells that can differentiate into specialised cells. They have to be programmed or guided to develop into insulin- secreting pancreatic islet cells. Stem cells can be cultured in the laboratory and potentially offer an endless source of pancreatic tissue.

TWO CASE STUDIES THAT OFFER HOPE

In September, scientists from Shanghai reported that a 25-year-old woman with Type 1 diabetes had started producing her own insulin within three months of a transplant of reprogrammed stem cells. The researchers extracted the cells from the patient and reverted them into a pluripotent (cells which can differentiate into any cell type) state, and subsequently used them to generate



islet cells. About 1.5 million of these cells were injected into the abdominal wall muscles. It has been over a year and the woman is maintaining normal blood sugar level without insulin injections.

However, she was already on immunosuppressants because of a prior liver transplant, which may have helped the cells to survive. Two other patients will also complete a year in November this year. Whether the cells can escape rejection and autoimmunity (which already exists in people with Type 1 diabetes) remains to be seen. Studies from Boston using stem cells but with different approaches — embryonic stem cells or donor stem cells placed in a device to protect them from immune system attacks — are in advanced stages.

This report was preceded by another study in April, where scientists reported successful transplantation of insulin-producing islets into the liver of a 59-year-old man with long-standing Type 2 diabetes. The islets were derived from reprogrammed stem cells taken from the man's own body. Instead of the pluripotent stem cells that were used in the aforementioned patient of type 1 diabetes, they used intermediate stem cell types (endoderm stem cells, which can differentiate into certain types of cells including pancreatic cells). Insulin was withdrawn within three months and the oral antidiabetic medications were discontinued in about a year.

The derivation of islet tissues from stem cells provides unprecedented new sources for treating diabetes. However, challenges remain. There is a theoretical risk of uncontrolled proliferation/tumour formation. Whether there is a requirement of life-long immunosuppression in patients receiving stem cell transplants is being studied. There is hope that stem cell-based approaches may reduce the need for immune-suppression or even eliminate it. Both types of diabetes also pose unique challenges. In Type 1 diabetes, there can be ongoing autoimmunity, which can potentially damage transplanted cells. In Type 2 diabetes, a transplant will only help those whose major problem is insulin deficiency rather than insulin resistance.

HOW 'SMART INSULIN' PROMISES TO REVOLUTIONISE DIABETES TREATMENT

Diabetes afflicts more than half a billion people worldwide, and causes nearly seven million deaths a year. In recent decades, the prevalence of this disease characterised by elevated levels of blood sugar has skyrocketed around the world.

Now, scientists have made a major breakthrough in developing what has been long called the “holy grail” diabetes treatments — a “smart” insulin that responds in real time to fluctuations in one's blood sugar level. The research was published in the journal *Nature* on Wednesday.

For decades, scientists have thus tried to develop glucose-sensitive insulin therapies. Thus far, the most advanced glucose-sensitive systems rely on the molecule being stored somewhere in the body (like in a packet under the skin), and being released based on one's blood sugar level, which is detected by a sensor attached to the body.

Engineering insulin

For the latest study, however, an international team of scientists from companies in Denmark, the UK, and Czechia, as well as the University of Britol, have modified the insulin molecule itself to give it an “on-and-off switch” that automatically responds to changing blood glucose levels.

The newly developed insulin named NNC2215 comprises two parts: a ring-shaped structure, and a molecule with a similar shape to glucose called a glucoside. When blood sugar levels are low, the



glucoside binds to the ring, keeping the insulin in an inactive state to prevent further lowering of blood sugar. But, as blood glucose rises, the glucoside is replaced by glucose itself, triggering the insulin to shift its shape and become active, helping bring blood sugar levels down to safer ranges.

Researchers who developed NNC2215 found it to be as effective as human insulin at lowering blood glucose in rats and pigs. Human trials will be conducted in the near future.

At the moment, the major problem with NNC2215 is that its activation and impact are not gradual. The engineered insulin requires a significant glucose spike to be activated, and once it is activated, there is a sudden rush of insulin in the system. Scientists are currently working to refine the molecule so that it is activated gradually, and insulin levels rise more slowly.

WHY IT'S TIME TO GIVE UP FRIED, BAKED FOODS FOR GOOD

Should Indians be changing their cooking styles dramatically as a nation that is carrying the highest diabetes burden? Researchers have now found that the heat involved in cooking produces advanced glycation end-products, or AGEs, harmful compounds that form when proteins or fats interact with sugars in the bloodstream. This process is known as glycation, which creates conditions that accelerate blood sugar levels in the body.

“Intense cooking methods like frying or grilling can dramatically increase AGE levels in food. For instance, foods cooked at high temperatures for extended periods generate more AGEs compared to those prepared using gentler techniques. What’s concerning is that AGEs accumulate in your body over time because they cannot be flushed out easily. Whenever you grill, bake, fry or toast, you are creating AGEs. Diet is considered the biggest source of this harmful compound. So even if you think you are eating healthy and grilling your food, it can still be high in AGEs,” says diabetologist Dr V Mohan, whose Madras Diabetes Research Foundation conducted a clinical trial that established the link between cooking methods and their resultant impact on diabetes. The study, which was funded by the Department of Biotechnology, Ministry of Science and Technology, was published in the International Journal of Food Sciences and Nutrition, recently.

HOW HIGH AGE FOODS CAUSE DIABETES

The buildup of AGEs has been associated with various health issues, including inflammation, oxidative stress, insulin resistance and cellular damage. “Inflammation is often the trigger for elevated plasma lipid levels and the development of insulin resistance, eventually resulting in fatty liver disease, atherosclerosis and diabetes. Insulin resistance is a stage where your cells in muscles, fat and liver don’t respond well to insulin and can’t easily take up glucose from your blood.

As a result, your pancreas makes more insulin to help glucose enter your cells. When your pancreas cannot make enough insulin and the cells become too resistant to it, glucose levels rise in your blood, leading to diabetes. There is oxidative stress, a condition where free radicals in the body are higher than antioxidants,” explains Dr Mohan.

His 12-week study involved 38 overweight and obese adults with a body mass index (BMI) of 23 or higher. “Researchers compared the effects of two diets: one high in AGEs and the other low in AGEs. Participants on the low-AGE diet demonstrated improved insulin sensitivity and lower blood sugar levels, while those on the high-AGE diet showed increased AGE levels and inflammation,” he adds.



Other than diabetes, dietary AGEs can lead to various chronic conditions like heart disease, chronic kidney disease, Alzheimer's and even some forms of cancer. "AGEs can damage blood vessels, increasing the risk of heart issues over time. Moreover, studies suggest that AGEs play a role in neurodegenerative diseases like Alzheimer's. Their presence may accelerate cognitive decline by promoting inflammation in the brain. Additionally, other health concerns such as rheumatoid arthritis and end-stage renal disease are associated with high dietary AGE intake. The implications extend beyond individual ailments, hinting at broader impacts on overall well-being as these compounds interfere with vital biological processes," says Dr Mohan.

WHICH FOODS ARE HIGH IN AGEs?

These comprise red meat and mostly all the foods we treat as snackable — fried items like chips, fried chicken, samosas and pakoras; baked goods such as cookies, cakes and crackers; processed foods like ready-made meals, margarine and mayonnaise; and animal-based foods cooked at high temperatures, including grilled or roasted meats (meat and poultry) and roasted nuts like walnuts and sunflower seeds.

"Dietary AGEs can sneak into our meals from various sources. A significant contributor is processed meats, including bacon and sausages. These often undergo high-temperature cooking methods that promote AGE formation. High fat dairy products may play a role, too. Certain cheeses, butter and cream cheese are packed with these compounds due to their fat content and the way they are prepared. Fried foods are another culprit. Cooking oils at high temperatures — think fried eggs or crispy potato chips — can dramatically elevate AGE levels in your diet," says Dr Mohan.

HOW TO REDUCE INTAKE OF DIETARY AGEs

Reducing dietary AGEs can be a straightforward process with some mindful choices. "Start by opting for cooking methods that generate fewer AGEs. Steaming or boiling food generally produces lower AGE levels compared to grilling or frying. Incorporate more unprocessed plant foods into your meals. Fresh fruits, leafy vegetables and whole grains not only add nutrients but also help mitigate AGE formation. Experiment with herbs and spices in your dishes. Ingredients like cinnamon, turmeric and ginger have been shown to reduce the production of AGEs during cooking," says Dr Mohan.

Consider marinating meats before cooking. "Using acidic ingredients like vinegar or citrus juice can slow down the glycation reaction between proteins and sugars," he adds.

What matters in the end are simple adjustments in your everyday diet and weight management that are bound to have results. A 2016 study in the US investigated the effects of a low-AGE diet in 138 people with obesity. It noted increased insulin sensitivity, a modest decrease in body weight and lower levels of AGE, oxidative stress and inflammation. The best is to eat antioxidant-rich foods. In laboratory studies by Polish researchers, natural antioxidants, such as vitamin C and quercetin were shown to hinder AGE formation. Several animal studies have shown that some natural plant phenols can reduce the negative effects of AGEs.