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INTERNATIONAL

US SUPREME COURT PRESERVES ACCESS TO ABORTION PILL: WHAT WAS THE CASE, AND WHAT THE COURT SAID

The US Supreme Court on Thursday (June 13) rejected a petition by anti-abortion groups seeking to undo the Food and Drug Administration's (FDA) approval of a commonly available abortion pill, called mifepristone.

In a unanimous ruling — authored by Justice Brett M Kavanaugh — the court held that as the petitioners lacked a direct stake in the dispute, they could not sue the FDA.

The verdict has preserved access to mifepristone in the US for now. The court, however, has kept the doors open to other attempts to limit the availability of the drug.

The development has come nearly two years after the apex court of the US overturned Roe v. Wade, which effectively repealed a federal right to abortion.

Here is a look at the case, the pill, and the ruling.

What was the case?

In 2022, four pro-life medical associations, as well as several individual doctors, sued the FDA in the US District Court for the Northern District of Texas. The petitioners had challenged the FDA's approval of mifepristone and the changes the federal agency made in the pill's conditions of use — the modification broadened mifepristone's distribution through mail and telemedicine (the provision of remote clinical services).

"The plaintiffs claim that mifepristone is unsafe and that the agency's approval process for the drug was flawed," according to a report by The New York Times.

In April 2023, federal judge Matthew J Kacsmaryk held that the FDA's approval of the drug should be suspended, removing mifepristone from the market.

Subsequently, an appeals court in New Orleans overturned this ruling partially to the extent that it invalidated the FDA's approval of the pill. It also imposed restrictions on the pill's distribution, including prohibiting sending the medication by mail or being prescribed by telemedicine.

However, the Supreme Court put the appeals court's ruling on hold and agreed to hear the case.

What is mifepristone?

Mifepristone is part of the two-drug regimen used for medical abortion. A patient first takes mifepristone to induce an abortion and then misoprostol to empty the uterus.

While mifepristone blocks progesterone — a hormone that supports menstruation and maintaining a pregnancy — misoprostol triggers uterine contractions, causing the body to expel the pregnancy as in a miscarriage.

The regimen was approved for use up to 10 weeks of pregnancy by the FDA in 2000. Since then, more than six million people have used mifepristone for abortion. Currently, the pill is used in about two-thirds of abortions in the US.

Studies have found the pill to be safe, and years of research have shown that serious complications are rare.

What did the court rule?

To reject the petition by the anti-abortion groups and individual doctors, the Supreme Court cited the "personal stake requirement" laid down in one of its 1982 judgments. The personal stake requirement basically means that the party seeking relief has to have a "personal stake in the outcome of the controversy."

The appellant should show that they have suffered or been threatened with some distinct and palpable injury. There must also be some causal connection between the appellant's asserted injury and the defendant's challenged action.

The Supreme Court found that the doctors and medical associations trying to challenge the FDA's regulation failed to show an actual injury because the plaintiffs didn't include people actually involved with the pill, like doctors prescribing mifepristone or pregnant women who took it. It said the plaintiffs could not show any harm suffered from mifepristone's availability.

In the judgment, the top court also said that federal courts do not operate as an open forum for citizens "to press general complaints about the way in which the government goes about its business".

ARMENIA BECOMES THE LATEST NATION TO RECOGNISE PALESTINE

Armenia announced on Friday it was recognising the State of Palestine, the latest country to do so during the war in Gaza, saying it was against "violence towards civilian populations."

A series of nations have recognised the State of Palestine amid the war between Israel and Hamas, drawing strong rebukes from Israeli officials.

Envoy summoned

Shortly after the former Soviet republic announced the recognition, Israel's Foreign Ministry said it summoned Yerevan's Ambassador for a "severe reprimand".

Yerevan noted it is "genuinely interested in establishing long-term peace and stability in the Middle East [West Asia]."

"Confirming its commitment to international law, equality of nations, sovereignty and peaceful coexistence, the Republic of Armenia recognises the State of Palestine," Armenia added. Yerevan, which has itself been ridden by conflict with neighbouring Azerbaijan for decades, slammed Israel's military conduct in Gaza.

Call for freedom

It also criticised Hamas for "the captivity of civilian persons" and said Armenia "joins the demands of international community on freeing them."

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In late May, Spain, Ireland, and Norway officially recognised the State of Palestine, stating they saw the move as a step towards peace in the region.

Israeli authorities accused the European trio of "rewarding terrorism" with their actions.

NEW COLD WAR

The security pact reached between Russian President Vladimir Putin and North Korean leader Kim Jong-un in Pyongyang, in which both countries promised mutual assistance "in the event of aggression", has echoes from the Cold War era. Russia and North Korea, erstwhile allies, are facing biting sanctions, but for different reasons. And, both are at odds with the West. Now, they seem determined to revive the alliance so that they can stand up to the western-led global order together. Mr. Putin's visit to Pyongyang, his first in 24 years, itself marked a new beginning. The Russian leader has supported multilateral efforts to curb the North's nuclear programme in the past. Moscow has also voted for sanctions at the UN Security Council against Pyongyang over its nuclear arsenals. But the Ukraine war appears to have altered Kremlin's geopolitical arithmetic and provided an opportunity for Pyongyang to make itself useful as an ally. When the Ukraine war dragged on and Russia came under western sanctions, Mr. Putin turned to Mr. Kim for ammunition and ballistic missiles. After Mr. Kim's visit to Russia in September 2023, North Korea reportedly supplied ammunition to Russia. Moscow stepped up supplies of food and fuel, and there was speculation that it could help the North's defence sector with critical technologies. While both have rejected reports of weapons trade, the security pact clearly elevates ties to the level of a de facto alliance.

Ever since the Ukraine war, Mr. Putin has steadily expanded Russia's cooperation with countries that are at odds with the U.S. He reportedly bought kamikaze drones from Iran. China has also emerged as a key economic, technological and energy partner. And, by promising to help North Korea, an isolated, one-family-ruled totalitarian state that is still technically at war with South Korea, in the event of an attack, Russia has signalled its readiness to play a larger role in northeast Asia. Mr. Putin, essentially a cold warrior, wants to build an axis of the 'others' opposed by the West to expedite the churn in the global order. China remains cautious but seems fine with the idea of its closest partners challenging the western order. This will have far-reaching geopolitical consequences. North Korea will now have little incentive to discuss denuclearisation. Russia, which already has testy ties with Japan, could see its relationship with South Korea deteriorating. The agreement is also likely to strengthen the emerging tripartite partnership in East Asia among Japan, South Korea and the U.S., further solidifying the new cold war between great powers, which is still in its early stages.

SOUTH AFRICA'S RAMAPHOSA RE-ELECTED PRESIDENT AFTER COALITION AGREEMENT

South African President Cyril Ramaphosa was re-elected for a second term after his humbled ANC cobbled together an unprecedented coalition government.

Lawmakers in Cape Town voted overwhelmingly on Friday to put Mr. Ramaphosa, 71, back in office for another five years after the May 29 general election produced no outright winner.

The election marked a historic turning point for South Africa, ending three decades of dominance by the African National Congress (ANC) of the late Nelson Mandela.

The party that led the anti-apartheid struggle won only 40% of the vote and, for the first time, lost its absolute majority in parliament.

It has now struck a deal to form what it calls a government of national unity.

"This is a historic juncture in the life of our country, which requires that we must work and act together," Mr. Ramaphosa said.

ANC Secretary-General Fikile Mbalula said on Friday the broad coalition brings together a majority of the 18 parties that won representation in the 400-seat National Assembly.

These include the centre-right Democratic Alliance (DA), the Zulu nationalist Inkatha Freedom Party and other smaller groups.

Mr. Ramaphosa was re-elected by fellow MPs with 283 votes in a secret ballot.

He saw off a last-minute challenge by Julius Malema, the firebrand leader of the radical leftist Economic Freedom Fighters (EFF), whose candidacy gained 44 votes.

THAILAND RECOGNISES SAME-SEX

- The Thai Senate, the upper house of Thailand's National Assembly, passed the Marriage Equality Bill on June 18, 2024.

- This puts Thailand on the verge of becoming the first country in Southeast Asia, and third in Asia after Nepal and Taiwan, to legalise same-sex marriage.

NATION

NEGOTIATING FOR PEACE

The two-day "Summit on Peace", that ended on Sunday in Burgenstock, met with mixed outcomes. Switzerland was able to bring together more than 90 countries, at least 56 were represented by leaders, and the final joint communiqué was signed by about 82 countries and organisations, with the exception of a few including India. The document made a strong call for an end to the "ongoing war of the Russian Federation against Ukraine" and a pitch for sovereignty, territorial integrity and adherence to international law. It cited three areas of broad understanding: nuclear safety, food security and the exchange of all prisoners of war, displaced and detained Ukrainians. The statement was not very ambitious in its scope, as the organisers were keen to bring as many countries, particularly from the 'Global South' on board — which they managed to do to some extent. However, despite all these areas where Ukrainian President Zelenskyy hailed a "historic victory", there were shortcomings. Switzerland's decision not to invite Russia, and to build their negotiations on the basis of the Ukraine Peace Formula along with UN resolutions, made the event appear one-sided. The failure in convincing China, which arguably holds the most sway over Moscow, to even send a delegation was another blow. That no BRICS member, current and future, signed on to the statement indicates that it was a non-starter among the emerging economies.

Switzerland, Ukraine and other western countries had made a special attempt to win India's favour for the conference, including a last minute appeal by Mr. Zelenskyy when he met PM Modi at the G-7 outreach summit in Italy. As a close partner of Russia, a key Global South player, and a country that has kept a balance in the conflict, India's presence would have been a major win for the organisers. However, while New Delhi sent the NSA and Deputy NSA to two preparatory conferences in Jeddah and Davos, the Indian delegation here was led by the Secretary (West) in the External Affairs Ministry. India has consistently abstained from every resolution at the UN, Security Council, IAEA, Human Rights Council and other multilateral fora that seeks to criticise Russia for its invasion of Ukraine. While India may share concerns over much of the text released at the conference, it could not have gone ahead with its overtly anti-Russian slant. In its presence, however, New Delhi showed that it is willing to be part of the process, especially if it leads to a more inclusive future conference, with Russia and Ukraine at the table. As a result, India's decision to attend the conference, but not endorse its outcome, was probably a foregone conclusion.

LAWS ON MERCENARIES IN WAR ZONES

On June 11, the Ministry of External Affairs (MEA) acknowledged the tragic loss of two Indian nationals who were recruited by the Russian Army amidst the ongoing conflict between Russia and Ukraine. The MEA in a press statement said that the Indian Embassy in Moscow has strongly raised this issue with the Russian Ambassador in New Delhi and authorities in Moscow, seeking the swift release and return of all Indian nationals currently serving in the Russian Army.

In February, The Hindu reported for the first time that Indians were getting killed while fighting on behalf of Russia in the Ukraine war. Over the past year, nearly 100 Indians have been recruited by the Russian Army after being reportedly duped by agents with the lure of money and a Russian passport. Contracts signed by these recruits stipulate a "no leave or exit policy" before six months of service, with salaries amounting to ₹1.5 lakh to ₹2 lakh per month. In January, Russian President Vladimir Putin signed a decree simplifying the process of obtaining Russian citizenship for foreigners who sign a minimum of one-year contract with the Army.

At least 30 Indians have so far contacted the MEA and the Indian Embassy in Moscow, seeking help to return. The deaths of the two Indian nationals highlight a disturbing reality — Indians are increasingly falling prey to labour trafficking rackets after being unable to secure jobs domestically leading to their recruitment as mercenaries in international armed conflicts.

What has been the MEA's response?

The MEA has issued a press note advising Indians to exercise caution while seeking employment opportunities in Russia. In March, the Central Bureau of Investigation (CBI) said that it had filed a first information report (FIR) booking 15 individuals and four companies for their alleged role in the "trafficking of gullible Indian nationals to Russia and duping them for better employment and high-paying jobs". In May, the central agency divulged that it had made four arrests in the case.

Who are mercenaries?

The distinction between conventional combatants and mercenaries is a fundamental cornerstone of international humanitarian law (IHL). A combatant is typically a member of the armed forces of a party to the conflict, whereas a mercenary is recruited from a third-party state unrelated to the conflict. Mercenaries usually engage in hostilities motivated primarily by personal gain as opposed to virtues of patriotism associated with regular combatants.

Article 47 of Additional Protocol I to the Geneva Conventions (API) envisages six cumulative conditions for a person to qualify as a mercenary. The person i) should be specially recruited locally or abroad in order to fight in an armed conflict, ii) has taken a direct part in the hostilities, iii) is motivated to take part in the hostilities essentially by the desire for private gain and, in fact, is promised, by or on behalf of a party to the conflict, material compensation substantially in excess of that promised or paid to combatants of similar ranks and functions in the armed forces of that party, iv) is neither a national of a party to the conflict nor a resident of territory controlled by a party to the conflict, v) is not a member of the armed forces of a party to the conflict, vi) has not been sent by a state which is not a party to the conflict on official duty as a member of its armed forces.

Under customary IHL, being a mercenary itself does not constitute a specific crime. However, if captured, they are not entitled to prisoner-of-war status or any protected categories under the Geneva Conventions.

This allows for their prosecution for war crimes or other grave breaches of humanitarian law.

They may also face charges under the domestic laws of the detaining nation. Nevertheless, mercenaries qualify for humane treatment in accordance with the fundamental guarantees of humanitarian law, as outlined under Article 75 of the API.

However, over time, African states began expressing reservations about this definition, as it only addressed international armed conflicts and overlooked civil wars, where mercenary activities were most prevalent. This led to the adoption of the Organization of African Unity Convention for the Elimination of Mercenarism in Africa in 1977 which included a more expansive definition of mercenaries.

Similarly, in 1989, the United Nations General Assembly (UNGA) adopted the International Convention against the Recruitment, Use, Financing and Training of Mercenaries that criminalised the recruitment, use, financing and training of mercenaries and also promoted inter-State cooperation in this regard.

The charter also widened the prevailing definition of mercenaries as provided under the Additional Protocol I to the Geneva Conventions to include "persons recruited for the purpose of participating in a concerted act of violence aimed at overthrowing a government or otherwise undermining the constitutional order of a State, or at undermining the territorial integrity of a State."

What are the limitations of the existing regime?

One of the major challenges of the existing regulatory regime is the lack of a clear, unequivocal, and comprehensive legal definition of what constitutes a mercenary. This is compounded by the fact that the domestic laws of most states do not criminalise mercenary activity. Additionally, the definition outlined under Article 47 of the API does not include within its ambit foreign military personnel integrated into the armed forces of another state — such as the Gurkhas (soldiers from Nepal who have served in the British Army since the 1800s). It also fails to establish mechanisms for holding accountable foreigners employed as advisors and trainers.

Dr. Shubha Prasad, Assistant Professor of International Relations at the Hertie School, Berlin highlighted the emerging trend of private military and security companies (PMSCs) gradually taking over roles previously associated with mercenaries. "These for-profit companies provide a range of services from combat to food supplies for troops. The legal framework surrounding the operations of PMSCs is more loosely defined and relies heavily on a country's domestic legal capacity", she said.

For instance, the operations of the controversial Wagner Group in Russia have been increasingly subjected to international scrutiny. Despite being registered as a private entity, it reportedly includes Russian Army veterans among its ranks. While the direct participation of the Wagner Group has been evident in the Ukraine-Russia conflict, the Kremlin had never formally acknowledged its connections with it. This has posed challenges in calling for accountability and assessing whether the group qualifies as a mercenary organisation. However, following the military corporation's aborted attempt at a coup last year, President Vladimir Putin acknowledged that it had received tens of billions of rubles in public money from the government.

"Signatories to the Montreux Doctrine have committed to stronger state oversight of private military and security actors. States are obliged to check whether PMSCs comply with international humanitarian and human rights laws. However, neither India nor Russia is a signatory to this document. That does not preclude India from imposing tighter restrictions on the recruitment of Indian nationals for such enterprises. Furthermore, we need stronger international legal frameworks to safeguard individuals who are coerced or misled into contracting with PMSCs", Dr. Prasad added.

What is the way forward

According to Dr. Prasad, the Indian government should develop a robust policy framework to address distress migration and implement strict measures against human trafficking. "India should adopt a two-pronged approach," she suggested. "Long-term preventive measures should target the underlying economic factors that are driving people to leave the country, while immediate measures should prioritise educating the public and ensuring strong pre-travel vetting for Indians going to Russia or other conflict zones".

For instance, she pointed out that pre-travel approval from the MEA for travel to Russia could be another measure to check if there are suspicious cases of human trafficking. This will also enable the identification of companies that are exploiting Indians, she added.

In 2012, Bangladesh implemented the Dhaka Principles for Migration with Dignity for ethical overseas recruitment of migrants. The Nepal government in January banned its citizens from travelling to Russia or Ukraine for employment after 10 young men were killed and dozens more reported missing while fighting, predominately in the Russian military.

NEW DYNAMICS

Welcoming leaders of 10 countries including Prime Minister Narendra Modi to the "G-7 Outreach" Summit, Italy's Prime Minister Giorgia Meloni said it was important to step away from the old trope of the "West vs the Rest". That sentiment explained Italy's decision to invite mainly the Global South countries including BRICS notables such as Brazil, India, and the UAE, to hold an outreach with seven African countries on energy issues, and to host the summit in the Mediterranean Apulia region. The G-7 was once hailed as a dynamic group of the world's most developed democracies where heads of state would roll up their sleeves once a year to effect real solutions to global financial and development issues. However, with manufacturing slowdowns, the COVID-19 pandemic, and the impact of the Russia-Ukraine conflict and western sanctions, the grouping has appeared more tired, and its meetings less effective. The shaky electoral fortunes of most of the G-7 leadership did not enhance that image at the summit. The joint communiqué read more like a laundry list of the world's problems, than it did as a strong call to action on resolving them. Most salient was the G-7's continued "military, budget, humanitarian, and reconstruction support" for Ukraine, but with no constructive plan on how to end the war. A Gaza ceasefire appeal has also not been accepted by Israel. The G-7's focus on China in the Indo-Pacific and on "industrial targeting" and unfair practices was particularly sharp, but it remains to be seen whether any member-country will reduce its own considerable trade ties with Beijing. A line in the communiqué that recommitted to about eight infrastructure corridors, including the India-Middle East-Europe Corridor, reinforced the lack of focus on executing (as distinct from discussing) projects.

Given the G-7's current situation, India, in attendance for the eleventh time, could well take stock of the engagement's utility. While the event was an opportune moment for Mr. Modi, now in his third term, to meet with some of the world's top leadership, the meetings themselves did not yield many outcomes. Formal bilaterals with the leaders of important partner the U.S., and fractious relationship-ridden Canada, did not materialise. Mr. Modi focused on India's elections as a "victory for the democratic world", on the importance of harnessing technology and artificial intelligence to bridge global inequalities, and on the value of the Global South, especially Africa. It would seem most of those issues would be better addressed in a larger and more representational format such as the G-20, while the G-7 may wish to review its own identity and purpose amidst a rapidly changing global power dynamic.

FINANCE SAYS NO TO HEALTH REQUEST FOR $10-MILLION FUND TO MEET G20 PLEDGE

The Global Initiative on Digital Health (GIDH) was launched as a "key deliverable" of India's G20 Presidency during the Health Ministers' meeting in Gujarat on August 19 last year in the run-up to the September 9-10 summit in New Delhi. It became part of the New Delhi declaration and India

promised to make a $10-million contribution to it as a seed fund...But India is yet to make its contribution of $10 million.

— The GIDH is a World Health Organization (WHO)-managed network of organisations, institutions and government technical agencies engaged in supporting national digital health transformation. In the Delhi Declaration, the G20 leaders welcomed the establishment of the GIDH "within a WHO-managed framework to build a comprehensive digital health ecosystem in compliance with respective data protection regulations".

— In view of the fact that the entire Global South and the West, including African Union and the Latin American nations, look upon India as the "torchbearer" in digital health, the matter of contributing $10 million to the GIDH was "reconsidered" in the Health Ministry with the approval of the Health Minister, said a source.

— India took over the G20 Presidency from Indonesia. Now, Brazil heads the G20 Presidency. Under Brazil's G20 Presidency, the GIDH is one of the health sector priorities, the sources said.

For Your Information:

— Achieving one of the three priority areas agreed upon during India's G20 presidency in 2023, the World Health Organization (WHO) in February launched the Global Initiative on Digital Health (GIDH) virtually, a platform for sharing knowledge and digital products among countries.

— The initiative will be a network of networks with four main components — country needs tracker, country resource portal (a map of resources available in a country), transformation toolbox that will share quality-assured digital tools, and knowledge exchange.

HOLD TALKS WITH DALAI LAMA, U.S. LAWMAKERS TELL CHINA

Days after the U.S. House of Representatives passed the Resolve Tibet Act that called upon the Chinese government to engage with the Dalai Lama, an influential group of U.S. lawmakers met the Tibetan spiritual leader at Dharamshala in Himachal Pradesh on Wednesday.

Addressing a rare public meeting, they said the U.S. will not allow Beijing to interfere in the "succession" of the Dalai Lama.

'Unwavering support'

The delegation, led by the Republican chair of the U.S. House Foreign Affairs Committee Michael McCaul, expressed a firm U.S. position on Tibet and described China's claim of having ancient links with Tibet as "ridiculous".

"Our support for the Tibetan people is unwavering. Your dreams for better days remain alive. Beijing is relocating entire communities under the guise of development activities. We know they are trying to control Tibetan Buddhism. It is time for Beijing to engage in unconditional dialogue with His Holiness," Representative Gregory Meeks said at the public gathering in McLeodganj, the seat of the Central Tibetan Administration.

An Indian official source said the U.S. lawmakers are on a "private visit" and declined to address the remarks made by them.

China on Tuesday said it will take steps to safeguard its sovereignty. "China will take resolute measures to firmly defend its sovereignty, security and development interests," Chinese Foreign Ministry spokesman Lin Jian said on Tuesday.

Speaking at the beginning of the event, Mr. McCaul recollected the circumstances that surrounded the exile of the Dalai Lama in 1959 and how he led 80,000 followers across the Himalayas into India to safeguard the unique Tibetan culture and way of life.

The visit by the U.S. delegation comes days before the 89th birthday of the 14th Dalai Lama, at a time of speculation about the future of the institution of the Dalai Lama, which has held the Tibetan diaspora together since the late 1950s.

"Decades later, the Chinese Communist Party (CCP) continues to threaten the freedom of the Tibetan people. They have even attempted to insert themselves into the succession of the Dalai Lama. We will not let that happen," said Mr. McCaul, directly addressing the issue of the reincarnation of the Dalai Lama.

Mr. McCaul, the U.S. Representative from Texas, also had an hour-long interaction with the Dalai Lama, lauding his commitment to non-violent methods to advance the cause of Tibetans.

The text of the Resolve Tibet Act, which has been passed by both Houses of the U.S. Congress, has several references to 'self-determination' in the context of the future of the Tibetan people, and this was reflected in the statements of the visiting delegates. "This Bill makes it clear that the U.S. believes that Tibet has its own unique language, religion, and culture. It has a right to self-determination," said Mr. McCaul.

Mr. Meeks also criticised the Chinese position on Tibet and described China's claims to the region as "propaganda". U.S. Representative Jim McGovern, a Democrat and one of the major supporters of the Tibetan cause in the U.S. Congress, made a forceful speech on the future of Tibet, saying that the U.S. government would never "waiver" in its support to Tibet. The presence of the U.S. lawmakers in Dharamshala was also a "sign" to Beijing that the U.S. leadership will ensure the "basic rights of the Tibetan people under international law", he said.

MARITIME RESCUE COORDINATION CENTRE

External Affairs Minister S Jaishankar on Thursday met Sri Lankan President Ranil Wickremesinghe and commissioned the Maritime Rescue Coordination Centre built with a USD 6 million grant from India during his first bilateral visit overseas after being re-appointed in the Cabinet.

— A statement issued by the Sri Lankan Foreign Ministry said Jaishankar also joined President Wickremesinghe in virtually handing over 48 houses, 24 each in Colombo and Trincomalee, built under the Model Village Housing Project and 106 houses in three up-country estates, built under Phase III of the Indian Housing Project, with funding from India.

— Wickremesinghe and Jaishankar jointly unveiled the virtual plaque to mark the formal commissioning of the Maritime Rescue Coordination Centre (MRCC) in Sri Lanka under a USD 6 million grant from India. This includes a centre at Navy Headquarters in Colombo, a sub-centre in Hambantota and unmanned installations at Galle, Arugambay, Batticaloa, Trincomalee, Kallarawa, Point Pedro and Mollikulam.

— Jaishankar said that neighbours such as Sri Lanka are extremely important to India and there is tremendous goodwill for them in India. He said the Indian government reaffirms the 'Neighbourhood First' Policy and the main purpose of his visit is to underline India's continued commitment to Sri Lanka as its closest maritime neighbour.

For Your Information:

— Sri Lanka and India are working on an estimated USD 1.2 billion undersea transmission line that will link the island nation's power grid with that of India to provide energy security to this country, a top Sri Lankan official said.

— On March 1, India and Sri Lanka signed an agreement for the development of a hybrid renewable energy system for the Delft, Analativu and Nainativu islands of the northern Jaffna peninsula.

DELHI, DHAKA SET NEW BALL ROLLING ON ECONOMY, TRADE, STRATEGIC TIES

India and Bangladesh pledged Saturday to start negotiations on a comprehensive economic partnership agreement (CEPA); decided to launch a medical e-visa facility for Bangladesh citizens; agreed to send a technical team to discuss Teesta river water-sharing and announced the opening of an Assistant High Commission in Rangpur.

— Four key imperatives seem to shape New Delhi's renewed strategic engagement with Dhaka in Modi's third term: health of Bangladesh's economy; addressing Bangladeshis' medical needs; expanding India's footprint while trying to check Beijing's.

— The decision to start negotiations on the CEPA was taken in view of the fact that Bangladesh is India's biggest trade partner in South Asia and India is the second biggest trade partner of Bangladesh in Asia. India is Bangladesh's largest export destination in Asia, with approximately $2 billion of Bangladeshi exports to India in FY 2022-23.

— The medical e-visa facility is a major step towards bringing relief to Bangladesh citizens who come to India for their medical treatment in Indian hospitals. In 2023, about 16 lakh visas were issued to people of Bangladesh and it is estimated that about 20-30 per cent of them were for the purpose of medical treatment. A medical e-visa would simplify and speed up the process.

— The decision to send an Indian technical team to explore the conservation and management of Teesta River inside Bangladesh is significant in the wake of Chinese interest in the project. An AHC is a mid-size diplomatic establishment, in size and scale between an embassy and a consulate.

— After the meeting between the two leaders, Indian and Bangladesh officials signed seven documents on digital partnership, green partnership, maritime cooperation and blue economy, space cooperation, railway connectivity, oceanography, defence and strategic operation studies, and renewed three pacts on health and medicine, disaster management and fisheries.

UAPA TRIBUNAL CONFIRMS 5-YR BAN ON TWO KASHMIR SEPARATIST GROUPS

The Unlawful Activities (Prevention) Tribunal on Saturday confirmed the Centre's decision to impose a five-year ban on Muslim League Jammu & Kashmir (Masrat Alam faction) and the Tehreek-e-Hurriyat Jammu & Kashmir under the anti-terror law.

— The Tribunal, presided by Delhi High Court's Justice Sachin Datta, observed that the two groups were Pakistan-sponsored organisations carrying out secessionist activities in Jammu & Kashmir with the aim of merging it with Pakistan and also to establish Islamic rule there.

For Your Information:

— The UAPA gives powers to the government to probe and prosecute people for acts of terrorism, and to designate an organisation as an "unlawful association" or a "terrorist organisation", or an individual as a "terrorist".

— It was enacted on the recommendation of the National Integration Council, set up in 1961 to find ways to counter problems that were dividing the country. In 1962, the Council constituted a committee that recommended introduction of "reasonable restrictions" in the exercise of certain fundamental rights. The UAPA was enacted with the objective of implementing these restrictions. However, in its original form, the Act largely dealt with secessionist activities, with no explicit mention of terrorism.

— In 2004, the Act was amended for the first time, with "and for dealing with terrorist activities" added to its title. The UPA government had repealed the much criticised Prevention of Terrorist Activities Act (POTA) that year, and the amendment to the UAPA sought to fill the void left by it.

— In 2012, the UAPA was further amended to include "economic security" of the country in the ambit of terrorism. Under this, the statute went on to designate production, smuggling and distribution of counterfeit Indian currency as a terrorist act.

EXPLAINED: BAIL IN MONEY LAUNDERING CASES, AND THE 'TWIN TEST' UNDER PMLA

A day after a trial court granted bail to Delhi Chief Minister Arvind Kejriwal who is in jail on charges under the Prevention of Money Laundering Act (PMLA), the Delhi High Court stayed the order.

A Bench headed by Justice Sudhir Kumar Jain on Friday heard an urgent plea by the Enforcement Directorate seeking a stay on the bail, and reserved its order until next week. The ED challenged the trial court's order on the ground that the court had failed to apply the 'twin test' for grantING bail under PMLA.

What is the twin test, and why is bail under PMLA so contentious?

Section 45 and twin test

Section 45 of the PMLA, which deals with bail, first states that no court can grant bail for offences under this law, and then proceeds to mention a few exceptions. The negative language in the provision itself shows that bail is not the rule but the exception under PMLA.

The provision makes it mandatory to hear the public prosecutor in all bail applications, and when the prosecutor opposes bail, the court is required to apply a twin test.

These two conditions are: (i) that there are "reasonable grounds for believing that [the accused] is not guilty of such offence"; and (ii) that "he is not likely to commit any offence while on bail".

There are similar provisions in several other laws that deal with serious offences — for example, Section 36AC of The Drugs and Cosmetics Act, 1940, Section 37 of The Narcotic Drugs and

Psychotropic Substances Act, 1985, and Section 43D(5) of the Unlawful Activities Prevention Act, 1967.

The provision in the UAPA, for example, states that "no person accused of an offence punishable under Chapters IV (Punishment for Terrorist Activities) and VI (Terrorist Organisations) of this Act shall...be released on bail or on his own bond unless the Public Prosecutor has been given an opportunity of being heard", or if the court "is of the opinion that there are reasonable grounds for believing that the accusation...is prima facie true".

Legal challenges to twin test

The first blow to the constitutional validity of the twin test came in a 2017 ruling, Nikesh Tarachand Shah v Union of India.

A two-judge Bench comprising Justices Rohinton Nariman and Sanjay Kishan Kaul struck down the bail provision as unconstitutional on the ground that the onerous conditions were not a reasonable classification. 'Reasonable classification' is a feature of the right to equality, which is a fundamental right.

However, by a subsequent amendment, Parliament put these provisions back in the law through the Finance Act, 2018. This re-insertion was challenged before various High Courts and eventually before the Supreme Court, culminating in a batch of petitions that were heard in 2022 as Vijay Madanlal Choudhary v Union of India.

The petitioners argued that the underlying reasoning in Nikesh Tarachand Shah was valid even if Parliament brought back the law. However, a three-judge Bench headed by Justice A M Khanwilkar (now retired) refused to accept the previous ruling.

"We are unable to agree with the observations in Nikesh Tarachand Shah distinguishing the enunciation of the Constitution Bench decision in Kartar Singh; and other observations suggestive of doubting the perception of Parliament in regard to the seriousness of the offence of money-laundering, including about it posing serious threat to the sovereignty and integrity of the country," the court said.

Legal experts have questioned the logic of equating money laundering with stringent anti-terror and narcotics laws when the offence of money laundering, however serious, carries a maximum sentence of only seven years. Only in money laundering cases where the scheduled offence involves narcotics, is the maximum sentence extended to 10 years.

In response, the government had argued in court that persons who are involved in money laundering are "influential, intelligent, and resourceful, and the crime is committed with full pre-meditation, which ensures that offence is not detected and even if it is detected, investigation agency cannot trace the evidence".

The government has defended the onerous bail conditions on the ground that the offence is committed "with the help of advanced technology so as to conceal the transaction".

Current position in law

One key aspect of the challenge to the amendment on bail conditions still remains open even after the Vijay Madanlal Choudhary ruling: the passing of these amendments through the Money Bill route.

A separate larger Bench challenge is pending before the SC on whether certain laws, such as the Aadhaar Act, service conditions of Tribunal members, etc. can be passed as a Money Bill. A Bench is yet to be constituted on that issue.

Although the Supreme Court has agreed to review its Vijay Madanlal Choudhary ruling itself, it is still valid law since no stay is operating on the judgment. As per the ruling, the twin test has to be rigorously applied by all courts — special courts trying money laundering offences as well as constitutional courts. It would also apply in the same way for both regular bail and anticipatory bail.

However, an accused can still get the benefit available under Section 436A of the Code of Criminal Procedure (CrPC), under which he is entitled to bail after serving half of the maximum sentence as an undertrial.

This means that in most money laundering cases, if the Enforcement Directorate is not able to finish the trial within three and a half years, the accused is entitled to bail, irrespective of the twin test.

BIHAR QUOTA STRUCK DOWN: WHAT IS THE 50% CEILING THAT COURT RELIED UPON?

Patna High Court on Thursday set aside notifications by the Bihar government increasing reservation in government jobs and educational institutions from 50% to 65%.

"It is to break the stranglehold of a few at the expense and to the detriment of the many that reservation to backward classes was envisaged. But merit cannot be completely effaced and sacrificed at the altar of reparations. This was the principle on which the 50% limit was laid down for reservations," the High Court said.

What is the history of the 50% ceiling for quotas, and why is it litigated so often?

The Indra Sawhney ruling

The 50% ceiling was introduced by the Supreme Court in its landmark 1992 decision in Indra Sawhney v Union of India in order to ensure "efficiency" in administration.

The 6-3 majority verdict that upheld the 27% quota for socially and economically backward classes (SEBC) set two important precedents — first, it said that the criteria to qualify for reservation is "social and educational backwardness"; second, it reiterated the 50% limit to vertical quotas that the court had laid down in earlier judgments (M R Balaji v State of Mysore, 1963, and Devadasan v Union of India, 1964). The 50% limit would apply unless in "exceptional circumstances", the court said.

The Indra Sawhney ruling has been re-affirmed in a host of cases since then. But efforts to breach the 50% limit have also continued, in Bihar and other states, and gained significant political currency. During the Lok Sabha election campaign, Congress leader Rahul Gandhi promised a caste census and extension of reservation beyond 50%.

Legal challenge to ceiling

The 50% limit is under challenge before the Supreme Court. Despite the pending challenge, laws that could breach the limit have been set aside by the courts. The only exception has been the 10% quota for the Economically Weaker Section (EWS) introduced in 2019.

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In November 2022, a five-judge Bench of the Supreme Court upheld the EWS quota in a 3-2 verdict that said the 50% ceiling applied only to SC/ ST and OBC quotas, and not to a separate quota that operated outside the 'backwardness' framework which was "an entirely different class".

"Moreover…the ceiling limit…has not been held to be inflexible or inviolable for all times to come," the majority opinion stated.

This observation has led to questions on whether the SC might reopen the Indra Sawhney question itself. In the minority opinion by two judges, there was a general refrain on whether it is permissible to breach the 50% ceiling since the issue is pending before the court. They sounded a "cautionary note" that "permitting the breach of the 50% rule as it were" could become a "gateway for further infractions, resulting in compartmentalisation".

Critics of the 50% ceiling argue that it is an arbitrary line drawn by the court, even as the legislature has consistently attempted to push back.

On the other hand, an argument is made that breaching 50% would be antithetical to the principle of equality since reservations are an exception to the rule. Dr B R Ambedkar's speech in the Constituent Assembly is often quoted as caution that reservations without qualifiers could "eat up the rule of equality".

However, there is also a view that reservations are a feature of the fundamental right to equality, and part of the basic structure of the Constitution. In its ruling of 2022 upholding the 27% OBC quota in NEET, the SC had said that "reservation is not at odds with merit but furthers its distributive consequences".

This reframing of the question on substantive equality rather than formal equality will be tested when the SC takes up the Indra Sawhney question once again, armed with the learnings from more than three decades of jurisprudence on reservations since the implementation of the report of the Mandal Commission.

Reservation in other states

The 76th constitutional amendment in 1994 inserted the Tamil Nadu reservation law breaching the 50% limit into the Ninth Schedule of the Constitution. The Ninth Schedule provides the law with a "safe harbour" from judicial review under Article 31A of the Constitution. Laws placed in the Ninth Schedule cannot be challenged for reasons of violating any fundamental right protected under the Constitution.

In May 2021, a five-judge SC Bench unanimously struck down a Maharashtra law that provided reservation to the Maratha community as unconstitutional, holding that the quota limit could not exceed 50%. With the implementation of the Maratha quota, reservation in the state could have gone up to 68%.

Similar to the Maratha issue are the cases of Patels in Gujarat, Jats in Haryana, and Kapus in Andhra Pradesh.

HIGH COURT'S TAKE ON MARRIAGE ACT, AN EROSION OF RIGHTS

A problematic order from the Madhya Pradesh High Court has given rise to the likelihood of a misinterpretation of the law around inter-faith marriages and a calling into question the scope of the Special Marriage Act, 1954. If unresolved, this could potentially lead to consequences contrary

to the objectives of the Act, which sought to provide a viable legal avenue for inter-religious marriages.

The issue has risen out of a petition that sought protection for an inter-faith marriage, jointly filed by an unmarried Hindu-Muslim couple before the Madhya Pradesh High Court. While hearing the arguments, the High Court went into the question of whether such a marriage of "a Muslim boy with a Hindu girl" under the Act would constitute a "valid marriage or not". The High Court then proceeded to not grant police protection to the unmarried couple on the grounds that theirs would amount to an invalid marriage. By doing so, the High Court has reversed the gains in the jurisprudence on the right to choice of partner and has rewritten the well-settled objectives of the Special Marriage Act.

Erroneous considerations

It is common practice that when a petition seeking police protection is filed under Article 226 of the Constitution of India, the High Court looks into the violation of rights of the petitioners and the extent of threat faced by them. Such petitions are usually filed by couples in inter-faith and inter-caste marriages. However, it is now seen that even in cases of unmarried persons, High Courts have extended them protection after considering the various threats emanating from society. In similar circumstances, Justice N. Anand Venkatesh of the High Court of Madras recognised the precarious situation encountered by same-sex couples and granted police protection to a lesbian couple.

Similarly, the Punjab and Haryana High Court granted police protection to a live-in couple holding that "the key issue at hand is not the legality of the petitioners' relationship, qua which they may be liable for civil as well as criminal consequences in accordance with law, but whether they are entitled to protection of their fundamental right under Article 21 of the Constitution".

In contrast, the Madhya Pradesh High Court, without weighing in on the real and apparent dangers faced by an inter-faith couple and adjudicating on the prayer for protection based on a threat assessment, has gone into the merits of an impending marriage itself. Even if the couple does not get their marriage registered, their claim for protection ought to have been decided in accordance with Article 21 of the Constitution, which provides for the protection of the right to life and liberty of an individual.

Dilution of the Special Marriage Act

Another serious concern is that the order passed by the Madhya Pradesh High Court goes against the very basis and objects of the Special Marriage Act. The order refers to a precedent from the Supreme Court of India in Mohammed Salim vs Shamsudeen (2019), a case which dealt with the issue of property succession arising out of a marriage between a Muslim man and Hindu woman under the Mohammedan Laws. This judgment should never have been considered as a precedent in either deciding the validity of an inter-faith marriage or for police protection.

The order also goes into Section 4 of the Special Marriage Act which excludes marriages between persons within the "prohibited degrees of relationship". The reliance of the Madhya Pradesh High Court on this prohibition is entirely untenable and factually flawed as this provision only bars marriages between those who are related. By doing so, the High Court failed to recognise that the objective of the Act is to facilitate marriage between any two Indian nationals "irrespective of the faith with either party to the marriage may profess".

The India of today and special marriages

The Madhya Pradesh High Court order assumes importance in the current social and political climate, where there is a real threat of vigilantism against inter-faith and inter-caste marriages, which do not have the sanction of the parents. The love jihad conspiracy, right-wing propaganda and consequent vigilantism have directly challenged our constitutional morality. While these are yet to be resolved, there is also a batch of petitions challenging unconstitutional provisions within the Special Marriage Act, such as prior notice which are pending before the Supreme Court. Tying these together is a common thread of individual autonomy, liberty, and equality. The Supreme Court in Shafin Jahan vs Asokan K.M. (2018), held that "intimacies of marriage lie within a core zone of privacy, which is inviolable". Dealing with a case of inter-faith marriage, Justice D.Y. Chandrachud, as he was then, wrote that "social approval for intimate personal decisions is not the basis for recognising them" and further, that "the Constitution protects personal liberty from disapproving audiences".

The ratio decidendi of the Shafin Jahan case has the effect of prioritising the absolute right of an individual to choose a life partner over any consideration of faith or caste-based diktats. With the spirit of this judgment having been lost sight of in recent years, it is wholly necessary for constitutional courts across the country to keep in mind that the arc of jurisprudence bends towards autonomy, privacy and liberty.

CRIMINALISING WORDS

The grant of sanction to prosecute writer-activist Arundhati Roy and academician Sheikh Showkat Hussain for alleged "unlawful activity" in a case dating back to 2010 is unwarranted. Delhi Lieutenant Governor V.K. Saxena, who had accorded sanction in October 2023 to prosecute the Booker Prize-winning writer and the former Kashmir University professor, respectively, for allegedly divisive speeches and imputations against national unity, has now given his nod for invoking Section 13 of the Unlawful Activities (Prevention) Act (UAPA) for the same set of speeches. The earlier sanction order was in his capacity as the appropriate authority on behalf of the Delhi government under Section 196 of the Code of Criminal Procedure. The recent one is, presumably, on behalf of the Central government, the appropriate authority to sanction prosecution for offences under Chapter III of the UAPA, under which Section 13 falls. The resurrection of this old case is an unfortunate instance of ill-motivated prosecution. The only possible explanation for the revival of this case, registered on a magistrate court's order in 2010, is that the present regime has found it expedient only now to do so, as part of its continuing crackdown on dissenters and outspoken critics. The eight-month gap between the two sanction orders is inexplicable, as the same material would have been placed before the sanctioning authority.

The regime at the Centre then did not deem it appropriate to prosecute the speakers at the conference held in Delhi in October 2010. Even though the Bharatiya Janata Party, then in the opposition, pressed for it, the Delhi police did not consider the speeches seditious. Its reluctance was possibly because the Centre did not want to jeopardise efforts to find a solution to the Kashmir problem through designated interlocutors. When a complaint was filed before a Magistrate, the court asked for a police report, but the Delhi police did not think the speeches warranted prosecution for sedition. However, on November 27, 2010, the Metropolitan Magistrate rejected the police stand and directed registration of a First Information Report. The FIR included Section 13 of UAPA, which seeks to punish "unlawful activities". Speeches made at the conference may have contained imputations about the status of Kashmir, but it is doubtful if a

mere speech, in the absence of a call to arms or instigation of violence, would amount to "unlawful activity" under UAPA. In any case, much has changed in the ground situation, especially in the aftermath of the abrogation of Jammu and Kashmir's special status in 2019 and its division into two Union Territories. The new coalition regime should move away from the earlier era's obsession with stamping out dissenting views and put an end to its propensity to criminalise speeches.

MPS 27 TIMES WEALTHIER THAN AN AVERAGE URBAN HOUSEHOLD

The 2024 general elections might have substantially changed the composition of the Lok Sabha in terms of party strengths, leading to a coalition government. However, candidates who thrived – even in the 2019 elections – were inevitably rich across most parties with assets equivalent to that of the top 10% of the urban households of the country.

The median asset value of winning candidates in the 2024 elections was ₹7.4 crore and close to 92% of the winners had assets of ₹1 crore or more, while 75% of them had assets of ₹3 crore or more. The median asset value of runner-up candidates in 2024 was ₹6.25 crore, with close to 88% of them having assets worth ₹1 crore or more, and 68% with assets worth ₹3 crore or more.

The numbers were similar in 2019. The median asset of a winning candidate was ₹4.8 crores, with close to 95% of the winners having assets of ₹1 crore or more, and 88% of them worth assets of ₹3 crore or more.

The median asset value of the candidates who were runners-up in the 2019 elections was ₹5.4 crore with close to 85% of them having assets worth ₹1 crore or more, and 63% had assets worth ₹3 crore or more.

That candidates who were winners or runners-up had assets worth more than ₹1 crore was possibly due to parties fielding only rich candidates. The median assets of candidates of the top 27 parties each in 2024 was at least ₹1 crore. For the two major national parties, the BJP and the Congress, the values were ₹7.6 crore and ₹5.4 crore respectively.

We use "median values" to filter out outliers; if we used "averages", the outliers — extremely rich candidates' wealth — would skew calculations. For example, Union Minister Chandra Sekhar Pemmasani of the Telugu Desam Party has declared assets worth ₹5,706 crore. If averages, instead of median values of assets of winners in 2024 were taken into account, the figure would shoot up to ₹46 crore, in comparison to a median of ₹7.4 crore.

That candidates are constituted from the elite segments of Indian society, in terms of wealth, is substantiated by a comparison of their assets with that of Indian households.

Significant gap

The All India Debt & Investment Survey- 2019 estimated that the average value of assets in an urban household was ₹27.1 lakh and the corresponding figure for a rural household was ₹15.9 lakh. These are "averaged" out numbers, meaning they could have been calculated as high because of rich outliers. Even then, the median assets of a winning candidate in 2024 was 27 times more than the average asset of an urban household, and that for a runner-up candidate was 23.1 times more.

These numbers suggest that only someone from the elite, in terms of wealth, can meaningfully contest general elections in India which reflects, to a large extent, the cost of election campaigning and financing.

However, there were exceptions: Jyotirmay Singh Mahato (of the BJP) who won from Purulia in West Bengal had assets worth ₹5.95 lakh, Mitali Bag (of the Trinamool Congress) from Arambag – ₹7.8 lakh and Priya Saroj (of the Samajwadi Party) from Machchilishahar in Uttar Pradesh – ₹11.25 lakh.

In terms of parties, the Bahujan Samaj Party (₹47 lakh), the Peoples Democratic Party (₹87 lakh) and the CPI(M) (₹1 crore) fielded candidates with the lowest median assets. Only the CPI(M) among them had winning candidates (four).

ON THE SIZE OF COUNCIL OF MINISTERS

The story so far:

The Union Council of Ministers (COM) headed by Prime Minister Narendra Modi was sworn in on June 9, 2024. The present COM consists of the Prime Minister, 30 Cabinet Ministers, 5 Ministers of State (MoS) with independent charge and 36 MoS.

Who constitutes the Council of Ministers?

India is a parliamentary democracy with the President as its nominal head. Article 74 of the Constitution provides that there shall be a COM headed by the Prime Minister (PM) to aid and advise the President. The real executive powers lie with the COM. A Minister should be a member of either the Lok Sabha or the Rajya Sabha and if not, should become one within six months of his/her appointment. A similar setup prevails in States with a COM headed by the Chief Minister (CM).

The COM consists of a Cabinet minister, MoS with independent charge, MoS and a Deputy Minister. The Constitution does not classify the members of the COM into different ranks. All this has been done informally, following the British practice. Cabinet Ministers are higher in rank and handle large portfolios while MoS assist the Cabinet Ministers and work under them. MoS with independent charge directly reports to the Prime Minister for their respective ministries.

What is the constitutional limit?

The first COM at the time of independence had only 15 Ministers headed by Prime Minister Jawaharlal Nehru. After the first general elections in 1952, Nehru inducted around 30 Ministers into his COM. Over the years, the size of the COM had gradually increased to around 50-60. Interestingly, it is the United Front governments led by Deve Gowda (June 1996) and I.K. Gujral (April 1997) that were sworn in with just 21 and 34 Ministers respectively. In 1999, when Atal Bihari Vajpayee became Prime Minister, his COM had 74 Ministers. However, the size of COM was becoming unwieldy in some of the larger States. For instance, in 2002 when Mayawati was the Chief Minister of Uttar Pradesh, she had 79 Ministers.

The National Commission to review the working of the Constitution under the Chairmanship of Justice Venkatachaliah set up in February 2000, had suggested a ceiling of 10% of the total strength of Lok Sabha/Legislative Assembly for the number of Ministers at the Centre/State level. Finally, through the 91st Constitutional Amendment in 2003, the total number of Ministers

including PM/CM in the COM was limited to 15% of the total strength of the Lok Sabha/State Legislative Assembly. There is no minimum requirement at the Central level whereas even the smaller States should have a minimum of 12 Ministers. For Union Territories of NCT of Delhi and Jammu & Kashmir (J&K), the maximum limit is 10% of the total strength of its Assembly.

What are the issues?

A thorny issue even after the limit on the number of Ministers is the appointment of Parliamentary Secretaries in various States. The office of Parliamentary Secretary (PS) also has its origin in the British system. In India, the post of PS was first created in 1951. They have not been a regular feature in the Central governments thereafter and the last PS at the Centre was appointed in 1990. However, various States have continued with their appointment to circumvent the limit on COM placed by the 91st Amendment. High Courts of Punjab & Haryana, Rajasthan, Bombay, Calcutta, Telangana, Karnataka etc. have quashed or questioned the appointment of PS in the States under their jurisdiction for indirectly violating the maximum limit on COM. The Supreme Court in July 2017 had also declared a law passed by Assam in 2004 for the appointment of PS as unconstitutional. The most recent instance is the order of the Himachal Pradesh High Court in January 2024 that restrained six PS appointed in the State from functioning as Ministers or availing facilities provided to Ministers. Appointing MLAs to the position of Ministers under the guise of PS to circumvent constitutional limits should be strictly prohibited and discontinued.

It is also pertinent to note that States like Sikkim, Goa and smaller States in the northeastern region with a current estimated population ranging from seven to forty lakhs have a minimum of twelve Ministers. However, Union Territories of Delhi and J&K with estimated population of over 2 crore and 1.5 crore, can have only a maximum of seven and nine Ministers respectively. The administration of public order, police and land in Delhi is not with the Delhi government. Similarly, public order and the police of Jammu and Kashmir will not be with its government. Nevertheless, considering the population of these Union Territories, the 10% limit for their COM may be reconsidered.

THE VAGARIES OF EQUIDISTANCE IN A POLARISED POLITY

Regional parties have been a significant presence in Indian polity for over three decades now. In the 2024 Lok Sabha elections, they could be classified into three types — one, parties that allied with the Bharatiya Janata Party in the National Democratic Alliance; two, parties that were part of the INDIA bloc and a distinctive third category. This category includes parties that were technically not part of the NDA, and had, in the recent past, endorsed controversial legislations introduced by the BJP or adopted ideological positions closer to that of the BJP.

The first category includes parties such as the Shiv Sena (led by Eknath Shinde), Janata Dal (United), Telugu Desam Party, Janata Dal (Secular), Lok Janshakti Party, Asom Gana Parishad and Nationalist Congress Party.

The second category includes Dravida Munnetra Kazhagam, the Samajwadi Party, the Shiv Sena (UBT), Nationalist Congress Party (SP), the Left parties, Rashtriya Janata Dal and Aam Aadmi Party. The Trinamool Congress supported the alliance after the polls.

The third category includes the Yuvajana Sramika Rythu Congress Party, Biju Janata Dal, the AIADMK, the Bahujan Samaj Party, the Bharat Rashtra Samiti and the Shiromani Akali Dal.

In 2024, the fortunes of the parties in the first two categories were tied to the fate of their respective alliances — they did well where the dominant party of the alliance performed well. But the parties in the third category did rather poorly.

11 CANDIDATES APPLY TO VERIFY EVM BURNT MEMORY: WHAT IS THIS PROCESS?

In a first, 11 candidates in the recently-concluded 2024 Lok Sabha and State Assembly elections have applied for verification of the burnt memory of the Ballot Units and Control Units of electronic voting machines (EVMs), and of Voter Verified Paper Audit Trail (VVPAT) units.

Eight of the applicants contested the Lok Sabha election, the other three were candidates in Assembly elections in Andhra Pradesh and Odisha.

The remedy of verification was made available to losing candidates by the Supreme Court this April. The candidates would have to bear expenses of the verification process, but they would be refunded if any tampering was found.

What did the Supreme Court order?

While upholding the EVM-VVPAT system and rejecting the plea for a return to ballot papers and for 100% counting of VVPAT slips on April 26, the court directed the Election Commission of India (ECI) to allow second- and third-placed candidates to seek verification of burnt memories of EVMs and VVPATs of up to 5% of machines in an Assembly constituency or Assembly segment of a Lok Sabha constituency.

This is what the two-judge Bench of Justices Sanjiv Khanna and Dipankar Datta said in its judgment (Association for Democratic Reforms vs Election Commission of India, April 26, 2024):

"The burnt memory/ microcontroller in 5% of the EVMs, that is, the control unit, ballot unit and the VVPAT, per assembly constituency/ assembly segment of a parliamentary constituency shall be checked and verified by the team of engineers from the manufacturers of the EVMs, post the announcement of the results, for any tampering or modification, on a written request made by candidates who are at Sl. No. 2 or Sl. No. 3, behind the highest polled candidate."

The court said that candidates or their representatives "shall identify the EVMs [to be verified] by the polling station or serial number", and "shall have an option to remain present at the time of verification". Requests for verification have to be made within seven days of the declaration of the result, the court said.

"The actual cost or expenses for the said verification will be notified by the ECI, and the candidate making the said request will pay for such expenses. The expenses will be refunded, in case the EVM is found to be tampered," the court said.

So what is the process to be followed for the verification?

The ECI is yet to finalise the technical standard operating procedure (SOP). The technical SOP, including the methodology, will be released in time for the first set of verifications that are in likely in August.

However on June 1, the ECI released the administrative SOP for checking and verification of the burnt memory of EVMs and VVPATs. The following points were laid down.

* The District Election Officer (DEO) will be responsible for the process, says the SOP.

* Both the second and third candidates will have the opportunity to request that up to 5% of the EVMs and VVPATS per Assembly constituency/ Assembly segment of a Lok Sabha constituency be checked. However, if both these candidates make the request, each of them would be allowed to have 2.5% of the EVMs verified.

* The candidates can choose the units to be verified either by giving the polling station number or the unique serial number of the Ballot Unit, Control Unit, and VVPAT that is made available to candidates before polling.

* The candidates have to make the request in writing to the respective DEOs and deposit Rs 40,000 (plus GST of 18%) per set of EVM (BU, CU, and VVPAT) to the manufacturer concerned.

* The DEOs will then be required to send a list of all such applications to the state Chief Electoral Officer, who will notify the manufacturers of the EVMs, public sector companies Bharat Electronics Ltd (BEL) and Electronics Corporation of India Ltd (ECIL), within 30 days of declaration of results.

* The checking will commence at the end of the 45-day period after declaration of results, during which Election Petitions against the outcome can be filed by any candidate or elector. Since the results were announced on June 4, Election Petitions can be filed until July 19.

* The checking will start only if no Election Petitions have been filed. In case a petition has been filed, the checking will start only after a court issues an order specifically allowing the checking to commence. The process is to be started within 30 days of the manufacturers being told if any Election Petitions have been filed. In such a case, mid-August is the earliest that the results of the checks can be known.

* The checking will be done at designated halls within the manufacturers' facilities, with the requisite strong rooms and CCTV cameras in place.

* Electronic devices, including cell phones and cameras, will not be allowed inside the halls. The hall will have a single entry and exit, with at least one section of armed police force deployed there.

Who are the candidates who have applied for checking?

The 11 applications together cover 118 polling stations or sets of EVMs and VVPATs. For Lok Sabha constituencies, three applications each have been received from BJP and Congress candidates, and one each from DMDK and YSRCP candidates.

Not all these candidates have lost by narrow margins — while the Congress candidate from Kanker in Chhattisgarh was defeated by just 1,884 votes, the Congress candidate in Karnal in Haryana was defeated by more than 2.32 lakh votes.

DRASTIC DECLINE

In Indian democracy, if a ruling party does not perform according to the expectations of the electorate, the opposition always gets the opportunity to win back the support of the people, provided it works towards earning it. This is evident in the contrasting fortunes of the Samajwadi Party-Congress alliance and that of the Bahujan Samaj Party (BSP), in Uttar Pradesh in the general election. The SP-Congress alliance took recourse to coherent messaging, targeting the Union

government on issues related to protecting constitutional rights and freedoms and economic problems, while managing to stitch a new alliance that transcended the politics of narrow caste arithmetic reminiscent of the Mandal years. This helped it win 43 seats, boost its vote share and gain support from OBCs and Dalits. In contrast, the BSP's vote share fell to 9.4% — a nearly four point drop from the 2022 Assembly elections — as even its loyal Jatav backers split their support between the three major political forces in the State. Other non-Jatav Dalits, OBC sections and the minorities (overwhelmingly in their case) endorsed the SP-Congress alliance.

The BSP, a party, which began as a movement led by Kanshi Ram, reached its apogee in the late 2000s after being part of a series of post-poll coalition governments before winning power on its own in a split polity in 2007. By this time, its ideology had also shifted from being a "bahujan" (a term connoting the subaltern) to that of a "sarvjan" party, a catch-all phrase for an alliance of contradictions in order to win a broad-based vote. In government, the BSP accorded dignity to the Dalit population in the State and engaged in a fervent politics of Dalit symbolism, but showed little gumption to address socio-economic issues through steps such as redistribution or enlightened governance. Out of power since 2012, the party has remained an anodyne force, with its leader Mayawati abjuring agitational politics and largely limiting her political messaging and activism to statements and press releases. Her party has retreated into a cocoon even as it has sought to be a spoiler in the parliamentary elections by promoting a political messaging that relied on a false equivalence of the BJP and the SP-Congress. After her defeat, Ms. Mayawati blamed EVMs, the weather and the lack of trust among Muslims, while still refusing to acknowledge her own lack of agency that has resulted in the BSP's decline. To revive itself, the BSP can learn from the experiences of the Viduthalai Chiruthaigal Katchi or even the fledgling Aazad Samaj Party (Kanshi Ram) that have taken to ideological and agitational struggle to represent the interests of Dalits, allowing these parties to punch above their weight.

IN PUNJAB, AAP'S CRACKDOWN ON ALLEGED POLICE-DRUG CARTEL NEXUS WAS LONG OVERDUE

Days after its poor showing in the Lok Sabha elections, in which it won only three of the state's 13 seats, merely two years after sweeping the state in the assembly polls, the Aam Aadmi Party government in Punjab is putting the drugs problem at the front and centre. Sensing that he is now on notice, Chief Minister Bhagwant Mann seems to have taken serious note of the rumblings on the ground during the poll campaign about the unrelenting flow of drugs. Last week, in an ostensible bid to break the alleged police-drug cartel nexus, a record 10,000 policemen were transferred. The CM has warned that anyone in uniform found with links to drug dealers would not only be dismissed from service but their property would also be seized.

The border state has been wracked by drugs for over a decade. According to the latest data released by the Narcotics Control Bureau (NCB), Punjab recorded the highest number of 144 drug overdose deaths in the country in 2023. In 2022, the state topped in cases pertaining to possession of drugs for trafficking. Last year, an Indian Express investigation found a disturbing trend — at least 10 per cent of the cases registered under the Narcotic Drugs and Psychotropic Substances (NDPS) Act in the state were against women. With their parents in and out of jail, an entire generation of children is staring at a bleak future. Veteran law enforcement officials call the advent of drugs narco-terrorism, pointing out how large consignments of drugs are dropped by drones from across the 553-km-long border that Punjab shares with Pakistan. There is also an increasing misuse of pharmaceutical drugs, which make up around 25 per cent of the cases registered in the state under the NDPS Act.

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Since 2017, successive state governments have come to power on the promise of eliminating this scourge. Former Congress Chief Minister Captain Amarinder Singh had vowed to weed out the menace within 40 days. Last year on Independence Day, CM Bhagwant Mann promised to banish it from the state by August 2024. But ground reports don't show a let-up in either the supply or the deaths. One reason is the enforcement policy that targets small peddlers and end users, with little action against the big fish. The Express investigation also found that only 2.46 per cent of the 11,156 FIRs filed under the NDPS Act by Punjab Police between April 1, 2022, and February 28, 2023, related to big operators. Whether this crackdown on the black sheep in the force and zero-tolerance towards suppliers will yield results is not yet clear. It must be hoped that it will — for the sake of the besieged state.

A KASHMIR PREACHER LOSES HIS RIGHT TO PRAY AT THE HAZRATBAL SHRINE OVER CONVERSION ROW

Less than 5 km from the Hazratbal shrine, which resembles the Taj Mahal in its white-marble facade, is the house of the Farooquis in Srinagar's Zakura area.

Kamal-ud-Din Farooqui, 73, a retired scientist from Sher-e-Kashmir University of Agricultural Sciences and Technology, has not been able to enjoy this green space though.

A couple of months ago, he was barred from the shrine, where he serves as the Imaam-o-Khateeb, a priest who leads prayers and delivers sermons on auspicious days.

It is a position he has held since 2016 and his family has been associated with the shrine for about 350 years. Also known as Assar-e-Sharief, the structure touches the Dal Lake on one side, and is special for Muslims, as it houses a strand of Prophet Muhammad's hair. Every Friday, lakhs of devotees throng its premises for prayers.

On April 5, Farooqui presided over a ceremony ahead of Friday prayers, when a non-Muslim converted to Islam at the shrine. "Every Friday, it pains me to cross the shrine but not stop there for prayers. I have to look for a shrine or mosque elsewhere, to offer jummah (congregational prayers)."

Hazratbal remains central to Kashmir's politics, with the original structure built in 1623 by Sadiq Khan, emperor Shah Jahan's subedar. The construction of the current structure started in 1968.

The Farooquis were forced to stay away from the shrine first in 1993, when Kamal-ud-Din's older brother, Bashir Ahmad Farooqui, then Imaam-o-Khateeb, was barred by a militant outfit from entering it. It was in April 1993 that the siege of the Hazratbal shrine took place, when a group of militants hid inside and exchanged fire with security forces, turning into a major stand-off in Kashmir's history.

Bashir Ahmad had "dared" to describe the act of smuggling arms by militants into the shrine as "un-Islamic". For this, he was punished. "My older brother was barred from entering the mosque for more than two years, and there was a threat to his life," recalls Kamal-ud-Din.

The trigger

On April 8, 2024, the executive magistrate of the Jammu & Kashmir (J&K) Waqf Board, which runs the Hazratbal shrine, said in an order that did not feature his name, that he had relieved Farooqui from the duties of Imaam-o-Khateeb "till the completion of an inquiry or till further orders".

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

A three-member committee, headed by J&K Waqf Board chairman Syed Mohammad Hussian, is investigating the alleged conversion episode.

The conversion saw Sandeep, a resident of Haryana, acquiring a Muslim name, Abdullah. The ceremony took place in front of Kashmir's prominent politicians, who had assembled for the last Friday prayers of the holy month of Ramzan at the shrine.

CASTE AWAY

The overt display of caste pride among schoolchildren in several parts of Tamil Nadu has often resulted in bloodshed. And the Justice K. Chandru Committee, constituted against the backdrop of a murderous assault on two Scheduled Caste (SC) siblings by their dominant community schoolmates in Nanguneri, has sought to remedy the situation. In its exhaustive report, it has recommended to the State government that students be prohibited from having any coloured wristbands, rings, or forehead marks (tilaka), which serve as caste identities. Students must refrain from using bicycles that are painted with any sign of caste reference. Besides, school names are not to bear any caste appellation. It has also called for the caste confidentiality of pupils. Such recommendations are not new. A quarter of a century ago, following caste clashes in the southern districts, the government had dropped the names of caste, community and leaders given to transport corporations and districts. Much earlier, it had experimented with the dropping of caste surnames from street signboards. A few years ago, the caste surnames of popular leaders were erased from textbooks.

The committee has rightly recommended that the government appoint a Social Justice Monitoring Committee comprising academicians and social activists to check the curriculum relating to social issues and suggest modifications, and push for the inclusion of topics based on social justice, equality, and non-discrimination. The suggestion to revise the B.Ed and Diploma in Elementary Education syllabuses to ensure orientation towards inclusivity is welcome. But the government would do well to ignore the regressive recommendation to do away with noon meal kitchens in every school. A centralised kitchen in every block/panchayat union, as recommended by the committee, may perhaps help in masking the caste identity of cooks, but it does not remedy the prevailing discrimination. Apart from practical difficulties in distributing food from central kitchens, children would be deprived of hot and fresh food. The suggestion to establish a uniformed Social Justice Students Force, which will "operate independently of the union government", and conduct regular drills and exercises, also needs to be viewed with caution. The existing NCC, Scouts and Guides and NSS setup is adequate enough to offer students such a space. The government must be cognisant of addressing discrimination which starts in children's habitats that are awash with caste-identifiable colours — from drinking water pipes to bus stops. The electoral success of parties with caste vote banks has only spawned more such outfits whose leaders use impressionable teenagers as political capital. Distressingly, such outfits are courted by mainstream parties. Unless there is a transformation at the village level and a political will to transcend caste considerations, efforts to establish harmony among school students on campuses may not be meaningful.

EXPLAINED: CULTURAL SIGNIFICANCE OF UTTARAKHAND'S JOSHIMATH AND KOSIYAKUTOLI, NOW TO BE RENAMED

The Centre approved the Uttarakhand government's proposal for renaming the Joshimath tehsil in Chamoli district to Jyotirmath, and the Kosiyakutoli tehsil in Nainital district to Pargana Shri

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Kainchi Dham tehsil on Wednesday (June 12). The move will likely enhance the religious and cultural significance of these areas, in a state that is already a major destination for religious tourism.

The Union Ministry of Science and Technology has also given a No Objection Certificate. It is required as the Survey of India, the body responsible for preparing maps in India, comes under the central ministry.

Joshimath made news last year after massive cracks developed in many of the town's roads and hundreds of buildings due to land subsidence. On the other hand, the Kosiyakutoli tehsil is well-known for Neem Karoli Baba's Kainchi Dham Ashram.

The story of Adi Shankaracharya and Jyotirmath

Jyotirmath (also known as Jyotir Peeth) is one of the four cardinal mathas (monasteries) that 8th-century philosopher Adi Shankaracharya is believed to have established across India to promote the Advaita Vedanta philosophy. The Jyotirmath was established for the preservation and dissemination of spiritual knowledge and practices.

It is believed that when Adi Shankaracharya or Adiguru came here, he performed penance under a tree known as the Amar Kalpavriksha. The name "Jyotirmath" comes from the divine light of knowledge he is said to have attained, with 'jyoti' meaning divine light.

From Jyotirmath to Joshimath

Jyotirmath was the hill town's ancient name. Over time, the local population began referring to the area as "Joshimath". This change was likely gradual and organic, influenced by regional languages, local dialects and the ease of pronunciation. The transition reflects a linguistic and cultural evolution rather than a specific historical event.

The name came into use sometime before the advent of British colonial rule. As a result, this name was registered in the government records. Later, when the tehsil and block were formed, they were also named Joshimath. While "Jyotirmath" was used in a more formal or religious context, "Joshimath" became the more commonly used name.

In recent years, some residents have demanded a change in the name to honour the town's historical and religious importance. Chief Minister Pushkar Singh Dhami announced the change during a programme organised in Chamoli last year.

The official recognition may further cement the town's status as a spiritual centre, attracting more pilgrims and thereby boosting local tourism and economic development. However, unchecked tourism and development works have also been cited as causes of environmental concern, particularly due to the region's ecological sensitivity.

Where "Kosiyakutoli" comes from

While Joshimath represents a subtle change from an older name, the case of Kosiyakutoli is about changing a lesser-known name that lacks wider recognition. Renaming it to Pargana Shri Kainchi Dham aligns its identity with Neem Karoli Baba's Kainchi Dham Ashram, which is a major site here that attracts devotees from across the world.

In the name "Kosiyakutoli", "Kosi" refers to the river of the same name which flows through the Nainital district and is important for the Kumaon region of Uttarakhand. Along with adding to the scenic beauty, it matters to the local ecology and economy.

The term "kutoli" is derived from the local language, referring to a village or settlement. In the Kumaoni language, naming a place after a prominent geographical feature like a river is common practice and the names often have meanings connected to the landscape, local history, or cultural attributes.

The link to Neem Karoli Baba

Kosiyakutoli came to be known for its association with Neem Karoli Baba and the Kainchi Dham Ashram he founded in 1962. Also known as Neeb Karori Baba, he was a renowned spiritual guru with followers in India and abroad. Although he passed away in 1973, he is revered to date for his teachings on bhakti yoga and devotion to God.

Among his Western disciples were well-known figures, including Apple co-founder Steve Jobs, former Harvard University professor Ram Dass (earlier named Richard Alpert) and kirtan singer Krishna Das, who helped spread his teachings globally.

Numerous anecdotes and stories of Neem Karoli Baba performing "miracles", where he is supposed to have materialised objects and healed the sick, contributed to the legend around him. Thousands of devotees flock to the Kainchi Dham Ashram every year, especially on June 15 — the anniversary of the Ashram's founding.

With the renaming, the site may gain further prominence among tourists. As with other renamed places, there would likely be a gradual phasing out of the old names, alterations in the local identity and diminishing of the historical and cultural narratives associated with the previous names.

ERASURES IN NCERT TEXTBOOKS GO AGAINST NEP'S MANDATE TO ENHANCE CRITICAL THINKING

Social scientists often refer to an adage: The past lives in the present. The axiom is particularly salient vis a vis the legacies of momentous events of the recent past — they resonate in political debates, influence policy and leave deep imprints on social and cultural landscapes. That's why an understanding of contemporary history, especially uncomfortable facts and fraught moments, should be critical to the National Education Policy's objective of "enhancing critical thinking among students". This imperative seems to have eluded the National Council of Educational Research and Training (NCERT). Director DP Saklani has justified the omission of the Gujarat riots and the violence after the Babri Masjid demolitions from the NCERT Class 12 Political Science textbook on the ground that an "expert committee felt that mentioning a few (riots) selectively is not good". Earlier, Saklani had said to the news agency PTI, "Why should we teach about riots in school textbooks? We want to create positive citizens, not violent and depressed individuals". His statements are troubling.

The NCERT director's statements show an overwhelming anxiety to present a picture of a sanitised society and polity by papering over faultlines and events that are constitutive of a nation's journey and, even, its learning arc. They appear to be of a piece with the premier textbook framing authority's recent outlook on syllabus revision. The Class 12 political science textbook, which hit the market last week, does not mention the Babri Masjid by name, calling it a "three-

domed structure". The section on the Ayodhya dispute has expunged the part on the BJP's rath yatra. The role of the kar sevaks and the communal violence that followed the destruction of the Babri Masjid do not find a mention. The parts in the textbook that referred to the President's rule in the BJP-ruled states after December 6, 1992, have been deleted. So has the passage that took note of the party's "regret over the happenings in Ayodhya". Earlier textbook revisions have deleted sections on the poverty and powerlessness of the Scheduled Caste and Scheduled Tribes, left out key passages on Mahatma Gandhi's assassination and omitted parts on the Emergency and protest movements.

Revision of learning material should, of course, be par for the course in a robust education system. Having said that, in times when young minds are exposed to a glut of information on history, society and culture from a variety of sources, including social media, textbooks hold the key to argumentative engagement with the country's seminal events, and its democratic processes. That's why they should keep abreast with the latest research and debates among scholars. Instead of addressing this need, the NCERT's silences and erasures — and its director's justifications — end up infantilising the learner.

TESTING TIMES

The cancellation of the UGC-NET examination on Wednesday, just a day after its supposed "successful conduct" by the National Testing Agency (NTA), is one more load of straw threatening to break the agency's creaking reputation. Coming as it did after irregularities in this year's NEET-UG (medicine), and complaints about the JEE (engineering), the NTA is under intense pressure. In some ways, the Education Ministry's actions are in stark contrast to its response to the ongoing NEET fiasco, and seem to indicate that it has learnt some lessons. It took suo motu action on the basis of the Home Ministry's cybercrime team's inputs, even without any formal complaints from candidates, unlike in the NEET case where it has dragged its feet through committees and court cases despite multiple allegations and police complaints of paper leaks. The Ministry immediately cancelled the UGC-NET and promised a fresh examination. It has asked the CBI to probe the case, while not heeding the persistent demand of NEET aspirants for a similar probe. However, for the over nine lakh UGC-NET candidates who studied for months, and then travelled long distances to their examination centres, some taking loans to cover their costs, this is little consolation.

These young people deserve answers, and right now, most of the questions are still unanswered. For one, no one in the government's education establishment has explained why the NET was an offline exam conducted by the CBSE till 2018, when it was taken over by the NTA and became an online exam, only to revert this year to an offline, pen-and-paper exam, which is potentially more vulnerable to paper leaks. As the investigation is carried out, full transparency is key to any hopes that the NTA can regain trustworthiness in the eyes of candidates. The second is accountability and punishment of the guilty. The government would also do well to consider a rehaul of the NTA's systems and personnel to ensure that the technical glitches, cheating scams, paper leaks, and proxy candidates that have plagued the exams this year are not allowed to happen again. With the fate of lakhs of India's educated youth and youngest voters at stake, it is not surprising that the testing agency's woes have become a political hot potato. Some Opposition leaders have demanded that the NTA be dismantled and the responsibility for entrance examinations be handed over to the States instead. This may well curb the Union government's centralising tendencies leading to examinations of enormous scale that are harder to manage in a far-flung nation. However, some all-India examinations will always remain, and the need is for the States to join the Centre in recovering the integrity of the beleaguered examination system.

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DON'T WAIT FOR KAVACH

Safety is a feature of rail operations – it is not an externality. Yet, once again, two trains collided at Rangapani, and one of these, unfortunately, was the passenger-carrying Kanchenjunga Express. Many precious lives were lost and several people were injured, including crew members entrusted with the responsibility of safe operations.

— "Collisions are the worst kind of accidents and invariably result in casualties. During the year 2022-23, a total of six collisions took place on the Indian Railways compared with only two during 2021-22."

— "Indian Railways, which suffered for many decades from a lack of finances for safety-related works including timely repairs, replacement, and maintenance of its assets, has now been provided finances exclusively for safety. This is not only through the creation of special funds known as Rashtriya Rail Sanraksha Kosh (RRSK) and the Rail Safety Fund but also through capital grants it is permitted to utilise towards these essential requirements."

— "An unprecedented allocation for capex of over Rs 2.5 lakh crore was made during 2023-24 and again for 2024-25."

— "A collision is a consequential accident. An important step to address the problem is KAVACH — an anti-collision device being made available in a phased manner. Two sections — Delhi-Howrah and Delhi-Mumbai — have been identified and sanctioned for this work. A total of 10,000 route km will be covered by KAVACH."

— "The Railway Board must come up with a plan of action involving the provision of low-cost equipment in locomotives to aid the driving crew, strengthen preventive maintenance of signalling assets, impart intensive training to staff, treat every Signal Passed at Danger (SPAD) case as a major accident and deal with it accordingly."

— "Despite major accidents involving collisions, the IR claims to have one of the best safety records in terms of accidents per million train km, even better than many European systems." "In 2022, in the rail systems of 35 countries, 1,888 significant rail accidents were recorded, which works out to 0.39 accidents per million train km. Compared to that, IR's record is 0.03 per million train km in 2022." "With all the outstanding work, the railways can ill-afford to have accidents involving the loss of precious lives. It is time to focus on collisions now without waiting for the KAVACH."

For Your Information:

— "The Comptroller and Auditor General (CAG) of India has recently issued two important reports on safety, speed, and punctuality on IR."

— "The report on speed and punctuality for the years 2019-20 says that between 2014 and 2019, there has been no increase in the average speed of mail and express trains —this has remained at 50 to 51 kmph, contrary to claims of achieving an average speed of 75 kmph under Mission Raftar, which has appeared in some form every five to seven years since 2005. As for freight trains, the average speed actually declined marginally, contrary to the Board's claims of doubling the speed."

— "The second CAG report, which is on accidents, is equally sobering. Though there has been some reduction in the number of accidents, it is largely a result of the manning of unmanned railroad crossings. The data shows little improvement with respect to derailments and collisions."

INTERNATIONAL YOGA DAY

June 21 is celebrated as the International Yoga Day. This year it was the tenth annual celebration.

A theme for this day is announced every year — this year's theme is "Yoga for Self and Society". Last year, the theme was "Yoga for Vasudhaiva Kutumbakam — One Earth One Family"

The first Yoga Day celebrations held in 2015 at Raj Path in New Delhi. Modi, along with other dignitaries, created two Guinness World Records — for being the world's largest yoga session (35,985 people), and for having the largest number of participating nationalities (84).

RISING CASES UNDER POSH ACT POINT TO BETTER REPORTING

More and more women are getting into STEM — Science, Technology, Engineering and Maths — courses in India, resulting in them landing jobs in corporate houses, especially in the IT sector. Hence, the proportion of women in leading corporate firms has increased considerably over time. Yet, attrition rate — the percentage of employees who leave an organisation — is also, in general, higher among women than men. Women leave organisations for many reasons, including societal pressure after marriage, pregnancy, and post-pregnancy work-life balance, reasons that rarely apply to men.

Adding to the list, workplace harassment — verbal, sexual or otherwise — may also play a role in such exits. If the number of cases reported under the PoSH Act is anything to go by, a look at just the figures from the top four IT firms shows that instances are rising again after a brief pause during the pandemic. The Sexual Harassment of Women at Workplace (Prevention, Prohibition and Redressal) Act, 2013 (PoSH Act) was introduced over a decade ago to protect women against workplace sexual harassment.

In Tata Consultancy Services, 110 cases were filed under the PoSH Act in FY24, about eight times more than what it was ten years back. In Infosys, 98 cases were filed in FY24, 3.3 times more compared with FY14. In Wipro, 141 cases were filed in FY23, peaking post the pandemic. In HCL, 55 cases were filed in FY23, while between FY18 and FY22, there were only 58 such cases. Chart 1 shows the number of PoSH complaints filed in select IT companies and the number of complaints upheld. These companies were chosen as a representative sample and also because PoSH data is properly maintained in big organisations.

While the numbers have increased over time, only a few such cases get reported officially. To understand why women, in general, especially those who are married, avoid raising such complaints, it is important to study the environment around them.

For instance, only 57% of men in India think that wives should have an equal or greater say in these decisions — making household purchases, visits to their family/relatives, how to spend the money they earn and how many children to have (Chart 2). Only 42% of women in India are allowed to go alone to specific places such as the market, health facility and places outside community/village (Chart 3). In urban India, the share is higher at 48.6%, compared with 39.2% in rural areas. Close to 23% of men agree that a husband is justified in beating his wife if he

suspects that she is "unfaithful". About 26% of women say their husbands are jealous if they talk to other men.

Taking cues from the above data, it is important to question what share of women — who come to work amid lack of freedom to travel and lack power to make major decisions on their own — will accuse a man of sexually harassing them at their job, especially those with a jealous and suspicious husband willing to punish them. In this context, the increase in the numbers should be seen as a positive development as women now have a better avenue, awareness and courage to report, but the figures should be taken with a pinch of salt as they hide more than what they reveal.

Also, in May last year, the Supreme Court flagged lapses in the way the PoSH Act was implemented. It said many firms have not even constituted Internal Complaints Committees and in places which have one, members were inadequate or lacked representatives from outside the company.

PATENT FILINGS CREDIT BHARAT BIOTECH AS 'INVENTOR' OF COVAXIN, OMIT ICMR

India's first indigenously developed coronavirus vaccine, Covaxin, was a joint collaboration between the Indian Council of Medical Research (ICMR) and the Hyderabad-based Bharat Biotech International Limited (BBIL) with intellectual property (IP) rights jointly shared between the two organisations. That is what the public record states.

However, filings by the BBIL at patent offices in India, the United States and Europe suggest that only its scientists and personnel are credited as 'inventors' of the vaccine with no mention of ICMR scientists.

The Hindu has viewed documents detailing these patent applications. If BBIL personnel, credited in applications as Deepak Kumar and Krishna Murthy Ella — Chairman and Founder, BBIL — are indeed the only inventors, it contradicts a statement by the Union Health Ministry in the Rajya Sabha, which claimed that the IP rights are "jointly owned".

In response to a question in the Rajya Sabha on July 2021 by Congress president Mallikarjun Kharge, who demanded details of the agreement between the ICMR and the BBIL for the development of Covaxin, the then Minister of State (Health Ministry) Bharati Pravin Pawar laid out a detailed response.

The Minister's statement said the ICMR would provide a "well characterised" virus strain for vaccine development, the BBIL would develop the final vaccine formulation and, be given a "non-exclusive" licence granted to commercialise the product within two years.

It was explicitly mentioned that the "..intellectual property over the product would be jointly owned by the ICMR and the BBIL".

The ICMR would also receive as royalty 5% of net sales to be remitted half-yearly.

The ICMR said that while it had not funded the BBIL for Covaxin development, one of its institutes — the ICMR-National Institute of Virology (NIV), Pune — had spent "funds for Covaxin development". It also funded phase-3 clinical trials of Covaxin at 25 locations, involving 25,800 participants. All in all, the ICMR spent ₹35 crore for developing Covaxin. As of January 2022 — as per an update by the government to the Rajya Sabha — the ICMR received ₹171 crore as royalty for Covaxin.

Ms. Pawar's response to Parliament, however, did not elaborate on the sharing of patent rights. The BBIL, which has over the years had several research collaborations with public research bodies such as the Council of Scientific and Industrial Research (CSIR) and the ICMR itself, has listed scientists from all institutions as 'inventors' in patent applications.

A BBIL spokesperson told The Hindu that the patent filed by Bharat Biotech was only for "process development" and specific to the making of the vaccine. It also covered the use of an adjuvant (an ingredient used in vaccines to elicit a stronger response) that was licensed from the Kansas-based ViroVax and added to Covaxin. India's patent laws allow both product and process patents. Product patents grant an inventor a monopoly over, say, a drug.

WHY THE HEALTH OF CHILDREN SHOULD BE AT THE CORE OF ANY POLLUTION POLICY

In yet another reminder of the severity of the problem, the State of Global Air (SoGA) Report 2024, released this week, shows that air pollution has become the second leading global risk factor for death. More alarming is the finding, which drew on data from 2021, that air pollution is the second leading risk factor for death among children below the age of five, with 709,000 out of 8.1 million of those who died that year belonging to this demographic. For India, where 2.1 million died due to air pollution, according to the SoGA report, the statistics are sobering: With 1,69, 400 of those dying being children under five, the country recorded the highest total number of deaths in this category.

For over two decades now India's air pollution has led to much hand-wringing, especially during the winter months when a thick layer of smog blankets a vast swathe of the country. Action, however, has mostly taken the form of piecemeal panic-induced measures, like spraying water to minimise dust on the roads and imposing the odd-even scheme for vehicles. Even with the adoption of clean air plans by most cities, the failure at the policy level to link pollution with public health has meant that the long-term damage it can cause has not received adequate attention. The heaviest price for this oversight is paid by the most vulnerable, especially, as is clear now, by children. They inhale more air per kilogram of body weight and absorb more pollutants compared to adults. With their lungs, brains and other organs still developing and their body's defence mechanisms still relatively weak, exposure to pollution sets them up for ailments like asthma, upper respiratory tract infection, childhood leukaemia and high blood pressure.

Still, there is hope. The report notes that since 2000, the global death rate linked to air pollution, among children under five, has dropped by 53 per cent. This is mainly the result of expanding access to clean energy for cooking, improved healthcare access and nutrition as well as building awareness. The measurable impact of implementing stricter air quality policies and encouraging the shift to hybrid or electric vehicles in Africa, Latin America and Asia also holds lessons. With 42 out of the 50 most polluted cities in the world and where a 2022 study found that even municipal employees — who should be among the frontline workers driving the change — had little awareness of air pollution's link to cancer and heart diseases, the challenge for India is steep. To face it, the health of its citizens, especially the young, must be at the heart of any solution.

THE ELDERLY ARE AILING, ALONE AND STRUGGLING WITHOUT THE MEANS TO SUPPORT THEMSELVES

A study by HelpAge India of a cross-section of elders across the country found that only 15% of them had a source of income. Among them, 24% were men and 7% were women. Around 29%

were supported by their children financially. At least 79% of the elders surveyed used government hospitals, and only 31% had health insurance.

Very few among those surveyed (15%) knew of the existence of exclusive geriatric facilities. The study was released in Chennai on June 15, which is observed as World Elder Abuse Awareness Day.

NATIONAL FORENSIC INFRASTRUCTURE ENHANCEMENT SCHEME (NFIES)

In a bid to have more scientific investigations across the country to achieve better conviction rates in criminal cases, the Union Cabinet Wednesday approved the National Forensic Infrastructure Enhancement Scheme (NFIES).

— The scheme, with a financial outlay of Rs 2,254.43 crore during the period from 2024-25 to 2028-29, aims to establish campuses of National Forensic Sciences University (NFSU) across the country apart from setting up more central forensic science laboratories enhancing existing infrastructure of NFSU, Delhi.

— According to the MHA, with the enactment of the new criminal laws which mandates forensic investigation for offences involving punishment of seven years or more, a significant increase in the workload of forensic science laboratories is expected. Further, there is a significant shortage of trained forensic manpower in the Forensic Science Laboratories (FSL) in the country.

For Your Information:

— The new criminal law code makes some crucial changes. The Bills for the first time bring terrorism, corruption and organised crime under the ambit of ordinary criminal law. These aspects were reserved for stringent special legislation since they upend the general protections by reversing the burden of proof on the accused to restrict bail. Other changes, like extending the time limit for police custody from 15 to 90 days, raise concerns about personal liberty and misuse of police powers.

KILLER MOONSHINE

Good governance is not only about keeping the routine going but also about anticipating obstacles and smoking out fault lines, preventing the loss of human life, at the very least. Over the last couple of days in Kallakurichi, in north Tamil Nadu, 39 people have died after consuming hooch laced with methanol. With others admitted in hospital in a critical condition, the toll might go up even further, rendering this one of the most devastating hooch tragedies in recent times. It is not as if the signs were not obvious, particularly after the hooch tragedy which claimed several lives in 2023 in Marakkanam and Madhuranthakam, also in north Tamil Nadu, where it was clear that industrial methanol was being diverted to the illicit brewing cottage industry. The relatives of those dead have spoken about the easy availability of cheap hooch in the region regularly, and that the cost of the local moonshine is much lower than the price of alcohol in the Tamil Nadu State Marketing Corporation Limited (TASMAC) shops. With irregular incomes as daily wage, fuelled by an aggressive price rise in liquor and fleecing at the TASMAC shops, regular drinkers gravitated towards the local brew. This trend is something that the Prohibition Enforcement Wing of the Tamil Nadu police is mandated to pick up, and act on. The State government has now taken action against district officials and instituted a one-man committee to inquire into the tragedy. The Chief

Minister has also announced a solatium of ₹10 lakh each for the families of those who died, and a sum of ₹50,000 for those in hospital. The CB-CID has commenced investigation into the case.

How are ethanol, methanol made?

Ethanol is legal liquor for consumption. It is produced biologically whereas methanol is produced from fuels such as coal in India. Molasses, which are a by-product of the sugar making process, form the starting material of distilleries that are often located close to sugar factories. They produce rectified spirit which is distilled further to produce edible extra neutral alcohol that in turn goes into making Indian Made Foreign Liquor, a lucrative cash cow for State governments. During ethanol production in responsible distilleries, methanol is also produced but is carefully removed since the processes are highly controlled.

Methanol is produced from coal and other fossil fuels. While ethanol can be made edible, methanol is poison. Even very low concentrations of methanol can be toxic, often fatal. However, it is needed to produce a range of products that are highly useful. Paints, for instance, can't be produced without methanol.

Is methanol easy to procure?

Just like ethanol, methanol is a highly controlled substance. Rules in Tamil Nadu ensure the manufacturing, transportation and storage are all licenced, monitored and the quantity and quality audited.

In northern Tamil Nadu, much of the methanol used in industries is sourced from Andhra Pradesh. Ground reportage suggests the existence of a lucrative methanol pilferage racket operating enroute and at the end-user side as well.

It is possible that methanol formed during the crude distillation process, adopted by the bootleggers at Kallakurichi, wasn't removed, leading to methanol poisoning. However, the widespread nature of contamination and scale of the Kallakurichi tragedy suggests that methanol was procured and supplied separately, either as part of a brew or alone in a diluted form. Given that illicit liquor has been produced and distributed widely here over many months, possibly years, methanol use was not a one-off event that happened only this fateful week at Kallakurichi.

Why is methanol used?

Most of the hooch tragedies in India occur due to methanol contamination in liquor. Street wisdom, or belief rather, may well be that the relatively inexpensive but potent poison that is methanol, if diluted enough, could provide the same effect as ordinary liquor — a state of intoxication or 'kick' for consumers.

Prosecutors in the 2015 Malvani, Mumbai hooch tragedy case in which more than 100 people died and some 75 were injured argued that all the accused had entered into a criminal conspiracy, and deliberately procured and supplied poisonous methanol. Lawyers defending the accused argued that their defendants would not knowingly add methanol. It made no business sense. And bootleggers, just like in Kallakurichi, live amidst the community. They provide a service that is much in demand and wouldn't want to kill their own folk. The additional sessions judge S. D. Tawshikar, in the Malvani case, acquitted 10 of the 14 accused but convicted four. The judge did not find anyone guilty of violating the Poisons Act of 1919. The four were convicted of criminal conspiracy, and culpable homicide not amounting to murder.

What needs to be done?

The periodic occurrence of methanol poisoning suggests the need for strong central legislation that can work with State legislation. Various laws such as the Poisons Act that involves State governments can tighten the methanol supply chain. The implementation of laws holds the key, especially when there are plans to ramp up the production of both ethanol and methanol for use as cheaper, eco-friendly alternatives to petrol and diesel for transportation.

The NITI Aayog has talked of ramping up methanol production from two metric tonnes to 20. Keeping methanol and ethanol separate and not allowing any pilferage should be a national priority.

HOW DANGEROUS IS METHANOL POISONING?

What is the alcohol in liquor?

Liquor is differentiated by its alcohol content — from the 5% or so of beer to the 12% or so of wine to the 40% or so of distilled spirits (all by volume). In the beverages consumed for recreational purposes, the alcohol in question is almost always ethanol. In this context, ethanol is technically a psychoactive drug that, in low doses, reduces the level of neurotransmission in the body, leading to its typical intoxicating effects.

Contrary to popular belief, the World Health Organisation has found "no level of [its] consumption is safe for our health". Long-term use leads to dependence, heightens the risk of some cancers and heart disease, and may eventually cause death.

Ethanol (C_2H_5OH) is one carbon atom bonded to three hydrogen atoms and one more carbon atom; the second carbon atom is also bonded to two hydrogen atoms and the hydroxyl group, also known as the ion $OH-$. Inside the body, ethanol is metabolised in the liver and the stomach by alcohol dehydrogenase (ADH) enzymes to acetaldehyde. Then, acetaldehyde is transformed into acetate by aldehyde dehydrogenase (ALDH) enzymes. The adverse effects of alcohol consumption, from the hangover to a cancer, are due to acetaldehyde.

What is spurious liquor?

Spurious liquor is characterised by the liquid mixture containing methanol as well. The police were able to determine last year that the spurious liquor in both the Chengalpattu and Villupuram incidents arose from the same source, and that arrack sellers had purchased methanol from factories and sold it to the victims (Arrack is distilled from the fermented sap of the palm tree). Following the Kallakurichi incident, Mr. Stalin constituted a one-man commission headed by former High Court judge B. Gokuldas to inquire into the tragedy.

In many older cases, spurious liquor has typically been a homemade liquor to which methanol was added to strengthen the intoxicating effects (in colloquial parlance, its 'kick') and/or to increase its bulk volume. The Food Safety and Standards (Alcoholic Beverages) Regulations 2018 stipulate the maximum permissible quantity of methanol in different liquors. These values span a wide range, including "absent" in coconut fenny, 50 grams per 100 litres of country liquor, and 300 grams per 100 litres of pot-distilled spirits.

What is methanol?

The methanol molecule (CH3OH) consists of one carbon atom bonded with three hydrogen atoms and one hydroxyl group.

Schedule I of the Manufacture, Storage and Import of Hazardous Chemical Rules, 1989 includes methanol. The Indian Standard IS 517 applies to how the quality of methanol is to be ascertained and, together with the Tamil Nadu Denatured Spirit, Methyl Alcohol, and Varnish (French Polish) Rules 1959, what signage methanol packaging should carry.

The most common way to produce methanol is to combine carbon monoxide and hydrogen in the presence of copper and zinc oxides as catalysts at 50-100 atm of pressure and 250° C. In the pre-industrial era, going back to ancient Egypt, people made methanol (together with several other byproducts) by heating wood to a very high temperature.

Methanol has several industrial applications, including as a precursor to acetic acid, formaldehyde, and aromatic hydrocarbons. It is also used as a solvent and as antifreeze. In Tamil Nadu, the manufacture, trade, storage, and sale of methanol requires licences under the 1959 Rules.

How does spurious liquor kill?

The deadliness of spurious liquor arises from methanol. James Manor, emeritus professor of Commonwealth Studies at the University of London, wrote in December 2022, "In every hooch tragedy in the history of India – and of the world since 1945 – the poison has been methanol." The human body contains infinitesimal quantities of methanol (4.5 ppm in the breath of healthy individuals, per a 2006 study) as a result of eating some fruits. But even for an adult, more than 0.1 ml of pure methanol per kilogram of body-weight can be devastating.

Once ingested, ADH enzymes metabolise methanol in the liver to form formaldehyde (H-CHO). Then ALDH enzymes convert formaldehyde to formic acid (HCOOH). The accumulation of formic acid over time leads to a condition called metabolic acidosis, which can lead to acidaemia: when the blood's pH drops below its normal value of 7.35, becoming increasingly acidic. The blood's pH is normally maintained by a balance between an acid, like carbon dioxide (CO2), and a base, like the bicarbonate ion (HCO3–). The 'metabolic' in 'metabolic acidosis' means the concentration of the bicarbonate ion is dropping, leading to the acid gaining the upper hand. Formic acid also interferes with an enzyme called cytochrome oxidase, disrupting cells' ability to use oxygen and leading to the build-up of lactic acid and contributing to acidosis.

According to a paper published by the journal Archives of Toxicology in January 2022, consuming methanol also leads to "methanol-induced optic neuropathy …, a serious condition that may result in long-term or irreversible visual impairment or even blindness [due to] damage and loss of function of the optic nerve and retina". This consequence "shows a tendency to occur as mass poisonings around the world with a clear predilection for poor societies in developing countries," it added. Methanol-poisoning can also cause cerebral edema, haemorrhage, and death.

How can methanol-poisoning be treated?

Once methanol is ingested, the body takes some time to completely eliminate it. One estimate suggests as much as 33% is still left behind after 48 hours. It is completely absorbed via the gastrointestinal tract. And blood methanol level can reach its maximum value within 90 minutes.

There are two immediate ways to treat methanol poisoning. One is to administer pharmaceutical-grade ethanol. This may sound counter-intuitive but ethanol competes very well with methanol

for the ADH enzymes, which metabolise ethanol around 10x faster. As a result, the methanol is kept from being metabolised to formaldehyde.

The other option is to administer an antidote called fomepizole, which has a similar mechanism: it slows the action of the ADH enzymes, causing the body to produce formaldehyde at a rate the body can quickly excrete, preventing the deadlier effects from kicking in.

Both courses of action are limited by availability: fomepizole is expensive whereas pharmaceutical-grade ethanol needs to be administered under expert supervision. Healthcare workers may also have the individual undergo a dialysis to remove methanol and formic acid salts from the blood, and mitigate damage to the kidneys and the retina.

They may also administer folinic acid, which encourages the formic acid to break up into carbon dioxide and water. Both fomepizole and folinic acid are in the WHO's list of essential medicines.

The formic acid would have begun accumulating in dangerous amounts around 18-24 hours after ingestion, affecting the optic nerve, kidneys, the heart, and the brain. Ophthalmic effects have been observed in 50% of those who have consumed methanol, and they become apparent within 24 hours.

If the individual consumed ethanol along with the methanol, the damage may not be evident until after a few days, further delaying treatment and increasing mortality.

SINGER ALKA YAGNIK REPORTS RARE HEARING LOSS CAUSED BY VIRAL INFECTION: WHAT ARE THE SYMPTOMS AND NEED-TO-KNOWS?

It is difficult to imagine that popular singer Alka Yagnik, somebody who lives with the sound of music, is going through hearing loss. Revealing she has a condition called sensorineural deafness in her social media handle, she wrote, "It has been diagnosed by my docs as a rare sensory neural nerve hearing loss, due to a viral attack…This sudden, major setback has caught me completely unawares. As I attempt to come to terms with it, please keep me in your prayers."

Sensorineural deafness is a type of hearing loss that happens because of damage to the inner ear, the place of origin of the nerve that runs from the ear to the brain, called the auditory nerve. "In fact, what many people ought to know is that many people with viral flu are reporting this condition this season. Every year, the flu season has certain dominant characteristics. This year, it's hearing loss. This can be cured if you report it to your ENT specialist within a week, preferably 48 hours. Damage could be permanent if you don't," says Dr Kalpana Nagpal, Senior Consultant, ENT, Head and Neck and Robotic Surgery, Indraprastha Apollo Hospital, New Delhi.

What is sensorineural deafness and how is it different?

The ear consists of external, middle and inner structures. When you respond to sound, your eardrum vibrates, which moves three tiny bones in your middle ear. These carry the sound to the cochlea, a fluid-filled chamber in your inner ear. The cochlea is lined with tiny hairs that vibrate when the sound waves hit them. These hairs convert the sound waves into an electrical signal to be sent to the brain.

When there is damage or other problems in your outer or middle ear, they affect the eardrum or tiny bones. This is called external hearing loss. Sensorineural hearing loss is caused by a problem in the inner ear. So the tiny hair cells that move sound through the ear cannot function properly

because of damage or viral infection. The problem worsens because stem cells in the ear can't repair the damaged layer just as rapidly.

Deafness resulting from external or middle ear damage can be cured. An inner ear nerve problem may not be cured if not addressed promptly.

What causes the condition?

In Yagnik's case, it is a viral infection. But it can be triggered by meningitis, mumps and measles. Other causes could be injury of the ear or head or exposure to really loud noises or sound over a prolonged period of time.

What are signs and symptoms?

Your sense of hearing goes down drastically or you cannot hear at all. You may see people's mouths moving but can barely catch their words coherently. They may sound like they are mumbling something. Sometimes you may have ringing or a buzzing sound in your ear. I would say if you feel numbness in the ear or reduced hearing, come and see the doctor immediately.

What's the treatment?

Viral infections lead to edema and swelling in the inner ear and even of the salivary gland. If the patient presents themselves within a week, we administer steroid injections in the eardrum to improve the hearing and relieve the edema. If the damage is permanent, then there are solutions like hearing aids, which can amplify sounds near you, or opt for cochlear implants.

What's to be done for prevention?

Given that we are living with more aggressive forms of flu each year, try to prevent acquiring one. Wear a mask in public places, take an annual shot of flu vaccine. And to protect yourself from any kind of hearing loss from external sources, wear good earplugs.

HOW THE GANDHI SAGAR WILDLIFE SANCTUARY IS BEING DEVELOPED AS INDIA'S SECOND HOME FOR CHEETAHS

The Gandhi Sagar Wildlife Sanctuary will be the second home for cheetahs in India, after the Kuno National Park. The Madhya Pradesh government has announced that it has completed its preparations for the ambitious project.

The final call on when the cheetahs will be imported from Namibia and South Africa will be made after the monsoons, during which the cats may be vulnerable to infection, especially with their winter coats on.

What makes Gandhi Sagar an ideal habitat for cheetahs?

The sanctuary is spread across an area of 368.62 sq km, in the districts of Mandsaur (187.12 sq km) and Neemuch (181.5 sq km) in western MP, right on the border with Rajasthan.

It sits atop a flat rocky plateau, with the Chambal river cutting the sanctuary into two almost equal halves. The Gandhi Sagar dam, constructed on the river in 1960, lies within the area of the

sanctuary, and so does parts of its reservoir, 726 sq km large in area and third largest in the country.

Due to the rocky terrain and exposed sheetrock, the topsoil is shallow. This is behind Gandhi Sagar's savanna ecosystem comprising open grasslands interspersed with dry deciduous trees and shrubs. The riverine valleys, however, are evergreen.

MP's wildlife officials say that Gandhi Sagar makes for "perfect" cheetah habitat.

"The landscape has much promise. It looks like Maasai Mara [a national reserve in Kenya known for its savanna wilderness and wildlife including lions, giraffes, zebras, hippos, elephants, and, of course, cheetahs]. Gandhi Sagar has the best habitat for the cheetahs [in India] after Kuno," a senior official told The Indian Express.

Officials, in fact, see the potential of expanding the cheetah habitat in Gandhi Sagar to an area of around 2,000 sq km. But that will depend on the coordination between Rajasthan's Bhainsrodgarh sanctuary, as well as the territorial divisions of Mandsaur and Neemuch.

Expanding the core area will rely "heavily on the states of Rajasthan and Madhya Pradesh to come up with a unified management plan," officials said.

How have officials prepared for the introduction of cheetahs in Gandhi Sagar?

But before the introduction of cheetahs, the sanctuary still needed to be "prepared" for their arrival. Currently, an area of 64 sq km has been developed for the cheetahs, at a cost of Rs. 17.72 crores.

Wildlife officials have been busy constructing a soft release enclosure (or boma) which, according to them, would "ensure a suitable and secure habitat for the cheetahs upon their arrival". This enclosure is 1 sq km in area, with four equal partitions.

Authorities are also constructing a hospital which would cater to the needs of cheetahs.

Moreover, wildlife officials are currently in the process of conducting a comprehensive status assessment of herbivores and predators in the sanctuary to gauge the existing ecological dynamics.

The Chairperson of the Cheetah Steering Committee was tasked to oversee and evaluate the overall readiness of the WLS to "ensure that the sanctuary is adequately equipped and prepared to support the successful integration and conservation of cheetahs within its natural landscape".

What is the biggest challenge to making Gandhi Sagar a viable cheetah habitat?

In one word: food. For cheetahs to sustainably survive in Gandhi Sagar, the first step is thus prey base augmentation, i.e. increasing the number of animals that the wild cats can prey upon.

Male cheetah siblings form coalitions comprising three to five members, whereas females live more solitary lives (unless they are with their litter). On average, a cheetah coalition is expected to make a kill every 3-4 days.

According to a Wildlife Institute of India report, "considering the finite growth rate of ungulates to be ~1.33, a population of about 350 ungulates are required for a single cheetah coalition family" (Y V Jhala et al, "Assessment of cheetah introduction sites and proposed action", 2021). Ungulates are members of a diverse clade of animals, primarily consisting of big mammals with hooves (like deer).

"About 1500 chital, 1000 blackbuck, and 350 chinkara should be translocated to Gandhi Sagar... this prey base would suffice for 7-8 cheetah family/ coalition," the WII assessment said.

MP's wildlife officials told The Indian Express that "prey animals such as chital (spotted deer) and gaurs (Indian bison) have been relocated from Kanha, Satpura and Sanjay tiger reserves to Gandhi Sagar."

But, an insufficient prey base is still an issue in Gandhi Sagar, much like it has been in Kuno. Officials are now pushing for around 5,000 antelopes to be relocated to Gandhi Sagar. This too will have its own hurdles, including "stress related mortalities" during the capturing and relocation process.

What are other challenges that cheetahs will face in Gandhi Sagar?

Just like in Kuno, the leopard population in Gandhi Sagar will pose a threat to cheetahs, with the two feline predators competing for the same prey, and possibly even clashing with each other in wild encounters.

In fact, apart from leopards, the sanctuary has several other co-predators as well, including sloth bears, striped hyenas, gray wolves, golden jackals, jungle cats, Indian foxes, and marsh crocodiles.

Moreover, experts have also stressed on the enhancement of protected areas across the region. While the forest department stressed that poaching was not a problem, the 2021 assessment found that despite the reasonably good status of the habitat, ungulate densities are extremely low, perhaps due to meat-eating communities residing in the area.

Unlike Kuno, highways and human habitation pass right outside the boundary of the protected area in Gandhi Sagar.

How will Gandhi Sagar be developed over time?

According to the 2021 report, the "first phase of augmentation should target the section west of the Chambal river so that cheetah reintroduction can commence there as soon as sufficient prey is available".

Wildlife officials too suggested the same, saying that developments within Gandhi Sagar should initially focus on the "Neemuch side of Chambal". The Chambal river acts as a "barrier to casual movement of wildlife" between the two halves of the sanctuary.

At present, the eastern side (Mandsaur side) sees more human activity. The Gandhi Sagar township, housing employees of the hydroelectric project on the dam, is located on the eastern end of the sanctuary. Today, the banks of the reservoir see some agriculture and livestock rearing, with the reservoir itself being used for commercial fishing.

ON THE HINDU KUSH HIMALAYAS SNOW UPDATE

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The story so far:

The Ganga river basin — India's largest — reached a record low snow persistence in 2024, the Hindu Kush Himalaya snow update of the International Centre for Integrated Mountain Development (ICIMOD) has reported. The Brahmaputra and the Indus basins have suffered similarly, threatening water supply to millions of people. "Tragically this is yet another postcard from the frontlines of a climate crisis that is accelerating even beyond scientists' projections and causing huge challenges in one of the most populated regions of the world," Miriam Jackson, Cryosphere Lead at ICIMOD and a contributor to reports of the UN Intergovernmental Panel on Climate Change, told The Hindu.

What is snow persistence?

Snow persistence is the fraction of time snow is on the ground. When this snow melts, it provides water to people and ecosystems. In the river basins of the Hindu Kush Himalaya (HKH), snowmelt is the biggest source of water in the streams. Overall, it contributes 23% of the runoff to the region's 12 major river basins every year. The HKH mountains extend around 3,500 km over eight countries — Afghanistan, Bangladesh, Bhutan, China, India, Nepal, Myanmar, and Pakistan. These mountains are also called the "water towers of Asia" because they are the origins of 10 crucial river systems on the continent — Amu Darya, Indus, Ganga, Brahmaputra, Irrawaddy, Salween, Mekong, Yangtse, Yellow river, and Tarim. These river basins provide water to almost one-fourth of the world's population and are a significant freshwater source for 240 million people in the HKH region.

What does the report say?

The authors of the 2024 HKH snow update analysed data from 2003 to 2024 and found significant fluctuations in snow persistence between November and April every year, when snow accumulates above ground. Based on this, they made grim predictions of lasting impact on the people in the region as well as those downstream of the river basins.

In India, snow persistence in the Ganga, the Brahmaputra, and the Indus river basins dropped significantly in 2024. The Ganga river basin noted its lowest snow persistence in 22 years, 17% below the long-term historical average (also known as 'normal'). The previous holder of this dubious distinction was 2018, when it was 15.2% below normal. In 2015, on the other hand, snow persistence was 25.6% above normal.

Similarly, snow persistence in the Brahmaputra basin was 14.6% below normal in 2024. It was worse in 2021, when the average persistence was 15.5% below normal. In the Indus river basin, snow persistence fell 23.3% below normal this year although this was offset by excesses in parts of the lower altitudes.

Outside India, the basin of the Amu Darya river — which flows through Central Asia — recorded its lowest snow persistence in 2024: 28.2% below normal. The figure for the Helmand river, an important source of drinking water for Iran and Afghanistan, was almost 32% below normal in 2024, beating a record set in 2018. Persistence in the part where the Mekong river originates in the Himalaya was only slightly below normal this time. (This river's delta is Vietnam's "rice bowl".)

What explains the lower snow persistence in 2024?

The primary reason for the lower persistence in 2024 was weak western disturbances, ICIMOD remote sensing specialist and author of the report Sher Muhammad told The Hindu.

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"Due to changing climate and global warming, this pattern is becoming increasingly unstable. Although the exact mechanisms are not fully understood, global warming is thought to exacerbate prolonged and intense La Niña–El Niño conditions. These phases of a recurring climate pattern across the tropical Pacific Ocean significantly influence global weather patterns, including western disturbances," he added.

Western disturbances are low-pressure systems that originate over the Mediterranean Sea, the Caspian, and the Black Seas and bring rain and snow to the HKH region in winter. "The region where these storms originate experienced persistently high sea-surface temperatures," Mr. Muhammad explained. "This disruption weakened and delayed the arrival of the western disturbance, resulting in reduced winter precipitation and snowfall in the HKH region. The pattern of high temperatures and altered weather systems explains both the record low snow persistence in 2024 and similar historical records."

"We have warned for years that the 1.5 degrees Celsius limit that governments signed up to in the Paris Agreement is not ambitious enough to protect the snow and ice, people and nature of the Hindu Kush Himalayas because the target is a global average, and the real temperature increase will be far higher here," Ms. Jackson added.

What explains higher snow persistence?

The persistence of snow in China's Yellow River basin exceeded the normal value by 20.2% in 2024. "The Yellow river basin is an area where the East Asian winter monsoon brings cold, dry air from Siberia and Mongolia," Mr. Muhammad said. "When this cold air mass interacts with moist air from other regions, particularly the Pacific Ocean, it can result in snowfall over the higher altitudes of the upper Yellow River basin."

"When the cold air from the east Asian winter monsoon systems interacts with moist air masses from the Pacific Ocean, it can result in snowfall at higher elevations in the eastern Himalaya," Mr. Muhammad added.

What about India?

Snow persisting on the ground is important for the Ganga river basin because its melt contributes to 10.3% of the latter's water, versus 3.1% from glacier melts. In the Brahmaputra and the Indus basins as well, snowmelt brings 13.2% and around 40% of the water, respectively, versus 1.8% and 5% from glaciers.

"Lower snow in 2024 may affect water availability, particularly and most importantly in the Indus basin, if there is less rainfall in the early season," Mr. Muhammad said.

In the long term, experts say, reforestation with native tree species can help the ground retain more snow. Better weather forecasting and early warning systems can also help local communities prepare for impending water stress. "Improving water infrastructure and developing policies for protecting areas receiving snowfall are important for long-term change," according to Mr. Muhammad. "Communities' involvement in local, national level decision-making and promoting regional cooperation are vital for comprehensive solutions for the sustainability of snow."

Ms. Jackson also stressed on the need to reduce emissions, which would mitigate increasing sea-surface and ground temperatures, both of which lower the persistence of snow. "The key work for all of us concerned about a liveable future on the earth is to build the political will for our

government representatives and business leaders to cut the cord on dirty fossil energy consumption and production, especially among G-20 countries, which account for 81% of all emissions," she said.

HOW CAN HIMACHAL PRADESH FIGHT AGAINST FOREST FIRES?

What does the State need to do in order to democratise forest management and curtail raging forest fires?

Himachal Pradesh (H.P.) is witnessing widespread forest fires across the region. According to the Himachal Pradesh Forest department, there have been a total of 1,684 forest fires since April 15. These fires have damaged a total of 17,471 hectares of forest land, resulting in significant loss to wildlife. From 2001 to 2023, H.P. has lost 957 hectares of tree cover from fires and 4.37 thousand hectares from all other drivers of loss.

How do forest fires start in the State?

Fires in the Himalayas occur during the pre-monsoon summer period of moisture stress, due to the resultant depletion of snowmelt water. The moisture conditions of the pre-monsoon season, characterised by rainstorms, play a critical role in determining the nature of forest fires. The less moisture there is, the greater the impact of the fires. Human activities such as unattended campfires, discarded cigarettes etc., are also some of the common causes for forest fires.

These fires are also a major source of pollutants, including black carbon, which significantly contribute to glacier melt in the Himalayas and negatively influences the regional climate. The primary causes of these forest fires are faulty forestry practices, and treating forests from a utilitarian perspective, excluding people's participation.

Have the Himalayan forests undergone a transformation?

The Himalayan forests have been systematically transformed over the last two centuries. A crucial watershed moment in Indian forestry began with the construction of railways in the 1850s. Lord Dalhousie's understanding about railway construction was that the railways were to be constructed not just to market British goods but also to serve as an outlet for British capital seeking profitable avenues. Unfortunately, the profitability of Himalayan forests continue to be a driving force. From 1853 to 1910, the construction of around 80,000 kms of railway track led to an assault on forests and the extinction of the customary rights of the people. Between 1869 and 1885, 6.5 million sleepers were made of Deodar, and the area for Chir pines was expanded for timber and resin. Total trees from which resin was tapped between 1910 and 1920 increased from 2,60,000 to 21,35,000. Resin was used for commercial and industrial applications, and its extraction continues to be a major source of production from pine forests. Verrier Elwin, an Oxford scholar and renegade priest, wrote in the early 20th century that State-managed forestry led to the gradual replacement of the Banj oak, a source of fuel, fodder, and leaf manure, with the Chir pine, which was more valued commercially as a source of timber and resin. Ecologically, Banj forests absorb a high content of rainwater, leading to better moisture retention and water springs in the mountains.

Currently, more than 17.8% of the total 37,033 square kilometers of forest area is covered with Chir pine trees in H.P. Chir forests are very vulnerable to forest fires.

What needs to be done?

Democratisation of forests is essential to ensure that people and communities who have lived in and around forests are made part of the forest management process. The rights of the local community have been periodically curtailed, and as a result, when forest fires start, first responders are nowhere to be found.

The traditional forest rights of Himalayan dwellers included the right to extract wood for fuel, timber, fodder, and other activities. H.P. is under Schedule V of the Indian Constitution, which requires community assent for development activities in the region. However, for large projects like hydro power generation, road widening, and four-lane highways, forests are being diverted with ease.

What the Himalayan States now need is to build mixed forestry and remove pine trees; ensure that both scientific and community knowledge converge and forest management is conducted in a participatory manner; implement check dams and other methods to revive water springs; create environmental services at the village level; and articulate their case with the ongoing 16th Finance Commission, seeking help apart from disaster mitigation funds.

WHAT IS INCOIS'S NEW PRODUCT TO FORECAST EL NIÑO AND LA NIÑA CONDITIONS?

Hyderabad-based Indian National Centre for Ocean Information Services (INCOIS) has developed a new product to predict the emergence of El Niño and La Niña conditions — they are different phases of El Niño Southern Oscillation (ENSO) — up to 15 months in advance.

Here is a look at the product, what challenges scientists faced while building it, and what is the forecast.

But first, what is ENSO?

ENSO is a climate phenomenon which involves changes in the temperature of waters in the central and eastern tropical Pacific Ocean, coupled with fluctuations in the overlying atmosphere. It can alter the global atmospheric circulation, which, in turn, influences weather across the world.

ENSO occurs in irregular cycles of 2-7 years and has three different phases — warm (El Niño), cool (La Niña), and neutral. In the neutral phase, the eastern side of the Pacific Ocean (near the northwestern coast of South America) is cooler than the western side (near the Philippines and Indonesia). This is due to the prevailing wind systems that move from east to west, sweeping the warmer surface waters towards the Indonesian coast. The relatively cooler waters from below come up to replace the displaced water.

In the El Niño phase, however, wind systems weaken, leading to lesser displacement of warmer waters. As a result, the eastern side of the Pacific becomes warmer than usual. In the La Niña phase, the opposite happens.

In India, while El Niño conditions usually lead to a weak monsoon and intense heatwaves, La Niña conditions result in a strong monsoon.

What is the new product?

Known as Bayesian Convolutional Neural Network (BCNN), the new product uses the latest technologies such as Artificial Intelligence (AI), deep learning, and machine learning (ML) to improve forecasts related to the ENSO phases.

The model's prediction relies on the fact that El Niño or La Niña are connected to the slow oceanic variations and their atmospheric coupling, which gives sufficient lead time to issue early forecasts. It calculates the Niño3.4 index value — used to determine the different phases of ENSO phases — and makes the forecast. The index value is obtained by averaging the sea surface temperature (SST) anomaly in the central equatorial Pacific, extending from 5°N to 5°S, and 170°W to 120°W.

How does BCNN compare with existing models?

There are largely two kinds of weather models used for forecasting. One is the statistical model, which generates forecasts based on various information sets received from different countries and regions. The other is the dynamic model, which involves a 3D mathematical simulation of the atmosphere done using High Performance Computers (HPC). The dynamic model is much more accurate than the statistical model.

The BCNN, however, is a combination of the dynamic model with AI. This helps it forecast the emergence of El Niño and La Niña conditions with a 15-month lead time — unlike other models which can give a prediction up to six to nine months in advance.

What were the challenges?

Typically, researchers need historical weather data — spanning several decades, and even centuries — to feed into models to generate forecasts. While rich data are available for land, there is a scarcity when it comes to seas and oceans. This gap has hampered the weather and climate prediction accuracy.

"One challenge in applying deep learning to the El Niño or La Niña prediction is the scarcity of sufficient training data sets due to the limited observation period. Since global oceanic temperature records have only been accessible since 1871, fewer than 150 monthly samples are typically available to date," an INCOIS official told The Indian Express.

The INCOIS team addressed the issue by incorporating data from historical runs (1850-2014 period) from the Coupled Model Intercomparison Project phases 5 and 6 (CMIP5 and CMIP6), thus augmenting the training dataset. CMIP is an experimental framework which allows climate modellers to simulate various scenarios in order to test the past climate and also project the future climate situations.

It took eight months to develop the BCNN model and it was put through several testing phases.

What is the prediction?

According to the June 5 bulletin, La Niña conditions would emerge during July-September (probability 70-90%) and continue till February 2025.

RIDING OUT A HEATWAVE

The recent surge in temperatures across North India has caused serious concern, with cities facing intense and prolonged heat. Maximum temperatures have exceeded normal levels by 4-8°C across

Haryana-Delhi, Punjab, Uttar Pradesh, Madhya Pradesh, Bihar, Jharkhand, Rajasthan, Odisha, and West Bengal.

— A heatwave is declared when the departure from normal temperature is between 4.5°C and 6.4°C, and a severe heat wave is declared when the departure exceeds 6.4°C. However, the entire region is currently experiencing heatwaves based on actual maximum temperatures above 45°C.

— When such extreme heat conditions persist for an extended period, they can pose risks to public health and infrastructure. Historically, heat waves in India lasted for five to 15 days. This year, it has persisted through most of May and June.

— Cyclone Remal, which originated in the Bay of Bengal, disrupted the arrival of monsoons from this region, exacerbating the intensity of heat waves. The monsoon stream through the Arabian Sea has also progressed steadily, sparing South India from similar heat wave conditions. This changing pattern underscores a direct link between monsoon variability and the duration of heat waves.

— Cities are particularly vulnerable due to the urban heat island effect, exacerbated by greenhouse gas emissions. Factors such as increased congestion, paved surfaces, depletion of water bodies, loss of vegetation, and high-density settlements trap heat and contribute to higher urban temperatures.

— The recent general elections saw polling officials lose their lives due to heatstroke in several states, including West Bengal, Odisha, Bihar, and Uttar Pradesh. In 2023, when 14 people died during a political rally at Kharghar in Navi Mumbai, humidity played a significant role. These incidents highlight the severe risk to public safety during such events, emphasising the need for better preparedness and immediate measures to mitigate heat-related hazards.

— Longer and more intense heat waves result in a higher relative risk of mortality, falling into two categories: Direct heat stroke deaths and increased cardiovascular disease (CVD) incidence. Each 10°F increase in mean daily temperature can lead to a 2.6 per cent rise in CVD mortality.

For Your Information:

— There are three key strands of support that HAPs must offer.

— One, it is crucial to improve temperature monitoring across cities and towns through a dense network of weather stations. This network should provide granular data on microclimates, enabling the identification of high-risk areas.

— Two, preparedness measures are essential to mitigate the immediate effects of extreme heat. Regulating working and school hours can help protect vulnerable populations.

— Three, implementing solutions such as improving and restoring water bodies, increasing vegetation cover, and promoting cool roofs and better ventilation in buildings will enhance thermal comfort.

LIMBLESS AMPHIBIAN FOUND IN KAZIRANGA FOR FIRST TIME

A limbless amphibian has been added to the fauna in the 1,307.49 sq. km Kaziranga National Park and Tiger Reserve.

Assam's wildlife officials said a team of herpetologists recorded the striped caecilian (Ichthyophis spp) in the tiger reserve for the first time during a rapid herpetofauna survey conducted from June 14-17.

Reptiles and amphibians, collectively called herpetofauna, are the least studied but most vulnerable to climate change. "Caecilians are limbless amphibians that spend most of their lives burrowed under soil. They are, therefore, the least studied of the amphibian species. As they are an ancient species, their presence holds critical linkages to evolution and intercontinental speciation," a statement issued by the Kaziranga authorities said.

The diverse ecosystem of Kaziranga, comprising flood plains, wetlands, grasslands, and hill tracts on the periphery, provides an ideal habitat for herpetofauna. The tiger reserve houses 24 species of amphibians and 74 species of reptiles. It is also home to 21 of the 29 species of tortoises and freshwater turtles found in India.

Kaziranga's Director, Sonali Ghosh, said, "a training and sensitisation programme was held to enhance the skills of forest personnel in herpetofauna identification and conservation for ensuring better management and protection of these vital species."

FEROCIOUS PLANTS

"On the top of the list of ferocious plants are of course the carnivorous ones, the leading lights of which belong to the renowned sundew family. One illustrious member is the Venus flytrap, which uses a deadly gin trap design in its leaves, backed up by a timing mechanism that ensures it doesn't snap shut when say, a raindrop falls on it, but will, if it's a fly."

— "There are a whole host of such plants, each with their own devious traps. Some like the notorious Nepenthes rajah may grow 41 cm high and 20 cm wide, its tankard-like bloom holding up to 3 litres of nectar-water, and another 2.5 litres of digestive juices, into which insects and thirsty rodents, lizards, and small birds fall, drown and dissolve."

— "In defence of these kattar carnivores, it has to be said that they grow in areas with very poor soil — in marshy, boggy areas — that are low in nutrients."

— "Plants can (and have to) be ferocious with other plants too. In dense forests, very little (as low as 2 per cent) sunlight penetrates to the forest floor, and without the sun, no plant can survive. So, every plant aims to get as high up in the forest canopy (preferably to the top) where its leaves, usually broad, can catch as much of the sun as possible as quickly as possible…. To do so, these lianas and vines will wind around other supporting plants and trees and throw lassos across trees to form bridges (useful for small animals). They are rooted in the ground and compete ferociously with the supporting plant for nutrients, water and sunlight. They stunt the host tree's growth and ability to produce seeds."

— "One of the most notorious of this clan is the strangler figs — the banyan being one among them. A bird deposits a sticky seed high up in a tree, the seed puts down a root, and sends up a stalk, with leaves. More roots emerge, clasping and encasing the trunk of the host tree like a nest full of pythons, gradually garroting it, while up above its leaves successfully compete with the host tree's leaves for sunlight. For the host tree, it is death by extremely slow strangulation and as its trunk rots away. All that is left is a fretwork of free-standing prop roots, hollow at the centre; always a rather disconcerting sight."

— "Epiphytes, like orchids, ferns and mosses are not quite as deadly. While they do grow from the trunks and branches of trees, using them for support, they get their sustenance from the leaf debris and rainwater that collects in the canopy. They are shallow-rooted and easily removed."

— "Trees are known to use the 'wood-wide-web' to exchange nutrients via hyphae, filamentous fungi threads at the ends of their roots, helping each other in times of need."

AS A NEW CAMPUS RISES AT AN ANCIENT SITE, THE STORY OF NALANDA

The campus of Nalanda University was formally inaugurated by Prime Minister Narendra Modi on Wednesday.

Spread across 455 acres, it is located in Rajgir, roughly 100 km from Patna, and merely 12 km away from the ruins of the eponymous ancient Buddhist monastery, considered to be among the greatest centres of learning in all of Antiquity.

'Reviving' Nalanda

It was then President APJ Abdul Kalam who officially proposed 'reviving' Nalanda in 2006. Addressing the Bihar Assembly, he said: "To recapture [Nalanda's] past glory… it has been proposed to establish a Bodhgaya Nalanda Indo-Asian Institute of Learning in partnership with select Asian countries".

In 2007, the proposal to re-establish Nalanda was endorsed at the East Asia Summit in Mandaue, Philipines. This endorsement was re-iterated in the East Asia Summit of 2009, in Hua Hin, Thailand.

In total, 17 countries other than India — Australia, Bangladesh, Bhutan, Brunei Darussalam, Cambodia, China, Indonesia, Laos, Mauritius, Myanmar, New Zealand, Portugal, Singapore, South Korea, Sri Lanka, Thailand, and Vietnam — have helped set up of the university. Ambassadors of these countries attended Wednesday's inauguration ceremony.

The Bihar Assembly, in 2007, passed the University of Nalanda Bill to facilitate the creation of a new, international university near the site of the ancient learning centre in Rajgir. In 2010, Parliament replaced this Act with the Nalanda University Bill, which deemed the proposed university to be one of "national importance", and laid down rules regarding how it would be governed.

In 2013, the masterplan for the campus, proposed by renowned architect B V Doshi's Vastu Shilpa Consultants, was chosen after an international competition.

Centre of research, learning

Nalanda University admitted its very first batch of fifteen students in 2014, to the School of Historical Studies, and the School of Ecology and Environmental studies. Classes were held in the Rajgir Convention Centre, with Bihar government-operated Hotel Tathagat acting as temporary hostel premises for the students. The faculty comprised six teachers.

Nobel Prize-winning economist Amartya Sen, who had been associated with the project since 2007, became the University's first Chancellor, and then-President Pranab Mukherjee became the first Visitor.

Since 2014, four more schools have been established — the School of Buddhist Studies, Philosophy and Comparative Religion, the School of Languages and Literature, the School of Management Studies, and the School of International Relations and Peace Studies. The university currently offers two-year Master's courses, PhD programmes, and a few diploma and certificate courses.

Campus to behold

By 2022, 90% of the campus's construction was completed. At the time, the university boasted 800 students, including 150 international students from 31 countries. At full capacity, the campus can accommodate as many as 7,500 students and teachers.

With a built area of only 8%, university officials say that the campus attempts to "match the architectural and geographical setting the ancient Nalanda University would have provided". In fact, the administrative block specifically recreates the exposed brick architecture, and elevated staircase that is the signature image of the Nalanda ruins.

That being said, the campus is a mix of the modern and the traditional. Natural light streams into classrooms' smart wideboards and electronic podiums. While air-conditioned, it utilises various methods, such as hollow walls, to provide natural cooling.

Water bodies — Kamal Sagar ponds — cover over 100 acres of the campus's area. Another 100 acres are covered in greenery. The campus boasts a drinking water treatment plant, and a water recycling plant, as well as a yoga centre, a state-of-the-art auditorium, a library, an archival centre, and a fully equipped sports complex. No cars are allowed inside.

Nalanda Mahavira

The chronicles of seventh century Chinese traveller Hsuan Tsang provide the most detailed description of ancient Nalanda. Hsuan Tsang estimated that at the time of his visit, the monastery housed 10,000 students, 2,000 teachers, and a gargantuan retinue of servants.

Multiple scholars, however, have disputed this figure based on archaeological evidence from the ancient university's ruins. That being said, Nalanda was definitely not an average Buddhist vihara.

"Under its aged and saintly abbot, Silabhadra, Nalanda also taught the Vedas, Hindu philosophy, logic, grammar and medicine. It would seem that the student population was not not confined to the Buddhist order, but that candidates of other faiths who succeeded in passing a strict oral examination were admitted," historian A L Basham wrote in his classic The Wonder that was India (1954).

TRAVELOGUES TELL US THE STORY OF NALANDA'S RISE

Earlier this week, Prime Minister Narendra Modi inaugurated the campus of Nalanda University. The extant University is only a decade old. But roughly 12 km away lie the ruins of the eponymous Nalanda mahavihara — one of the greatest centres of knowledge in the ancient world.

— The history of Nalanda — from comprehensive descriptions of the mahavihara, to its origin story and the rules students had to follow — has primarily been written based on Buddhist manuscripts, and travelogues by Chinese and Tibetan pilgrims. Since the early 20th century,

modern archaeological evidence has been used to corroborate (or sometimes challenge) these literary sources.

— Most quoted among the literary sources is the travelogue of 7th century Chinese pilgrim Xuanzang (also known as Hsuan Tsang or Mokshadeva), who travelled across India from 629–645 CE in search of Buddhist manuscripts and "correct" teachings. He spent roughly five years in Nalanda, where he studied under the mahavihara's grand abbot, Silabhadra.

— According to Xuanzang, the first vihara was built at the site in the 1st century BCE.

— Chinese monk Faxian (also known as Fa Hien), who journeyed through Magadh in the beginning of the 5th century CE, did not even mention Nalanda mahavihara. In fact, the earliest archaeological evidence from the ruins of Nalanda — a coin inscribed with the name of Shakraditya (known in non-Buddhist sources as Kumaragupta I, the son of Chandragupta II "Vikramaditya") — can be dated to between 415-55 CE, when Shakraditya reigned.

— Xuanzang too recognised the contributions of Shakraditya and his successors.

— By the time Xuanzang arrived in the 630s CE, Nalanda mahavihara was in its heyday — "priests, belonging to the convent, or strangers residing therein always reach to the number of 10,000…"

— But Xuanzhang was not immune from exaggeration. Scholars who study him, by and large, agree that his writings are a "mix of the implausible, the hearsay and a firsthand account". Available evidence does not corroborate his claim of 10,000 Nalanda residents, a figure that is still commonly cited.

— Yijing's writings provide a very detailed account of life in Nalanda, which he describes as the "best overall monastery" in the west (of China). For instance, he gave a detailed account of monks' daily bathing ritual.

— Nalanda was built and sustained by wealthy patrons, from merchants to kings. In Education in Ancient India (2002), Sanskritist Hartmut Scharfe wrote that patrons were not limited to only Buddhists, with "the emblems on their seals show(ing) Lakshmi, Ganesha, Shivalinga and Durga".

— Royal patronage likely began with the Gupta dynasty in the 5th century CE. After the Guptas, Harshavaradhana of Kannauj (known in Buddhist sources as Siladitya) was the most notable patron.

— Even though royal patronage continued into the reign of the Palas (8th-12th century CE), it witnessed a gradual decline due to a number of competing monasteries such as Vikramshila and Somapura came up during the Pala reign.

— The invasions of the likes of warlord Bhakhtiyar Khalji (late in the 12th Century) were also responsible for Nalanda's decay, albeit their impact is overstated in popular imagination.

— The Buddhism that did survive veered sharply towards more tantric and esoteric versions, which borrowed majorly from Brahmanical religion, not the Mahayana Buddhism that Nalanda propagated.

— Socio-political changes also played a part in Nalanda's decline. "In the eleventh century Islam replaced Buddhism as the greatest trading religion of Asia while the agrarian world within India was gradually lost to the Brahmins," according to historian Pintu Kumar.

For Your Information:

— In total, 17 countries other than India — Australia, Bangladesh, Bhutan, Brunei Darussalam, Cambodia, China, Indonesia, Laos, Mauritius, Myanmar, New Zealand, Portugal, Singapore, South Korea, Sri Lanka, Thailand, and Vietnam — have helped set up of the university. Ambassadors of these countries attended the inauguration ceremony.

WHAT CALCUTTA OWES ITS BAREFOOT HISTORIAN

One October afternoon in 1955, a 21-year-old matriculate from Kerala's Ernakulam district got off the Madras Mail at Howrah Railway Station, armed with skills in shorthand and typewriting and 20 rupees in his pocket. He found a job as a stenographer at a private firm in what was then Calcutta. Work was boring. But P Thankappan Nair, who passed away on Tuesday aged 91, was fascinated by Calcutta's lanes, bylanes, thoroughfares and colonial architecture. He would spend hours, mostly barefoot, soaking in the sights and talking to people. Curiosity led Nairda, as he began to be fondly called in his adopted city, to scan archives, corporation records and libraries. He collected maps and newspaper clippings. Before giving in to the repeated requests of his family members to retire and return to his native place, Nair had written more than 60 critically acclaimed books and 600 articles on Calcutta's social life, communities, roads, even the police. Most of them were drafted on his 1964-make Remington typewriter.

Much of Nair's work was done in times when academia was largely preoccupied with nationalist or economic history. The barefoot historian, in contrast, was concerned with every aspect of the city — the origins of its name, the story of its High Court as well as the history of its eating places and watering holes. He collected oral testimonies much before they became part of the methods of the country's professional historians. Nair's spartan two-room house had more than 3,000 books — a collection he donated to the Kolkata Municipal Corporation in the 1990s.

Several of Nair's accounts were contested. He did not credit Job Charnock with creating Calcutta, though he agreed that the modern city owed much to the English settler. Nair's contention that the city's famed Kalighat temple once stood at a site different from its current location was also disputed by some historians. However, no one doubted his scholarship. As the historian Sekhar Bandyopadhyay wrote in Calcutta, The Stormy Decades, a volume he co-edited with Tanika Sarkar, "Calcutta owes a great deal to its resident Malayali scholar".

BUSINESS & ECONOMICS

MORE CENTRAL BANKS TO INCREASE GOLD RESERVES WITHIN 12 MONTHS, WGC SURVEY FINDS

More central banks plan to add to their gold reserves within a year and more of them expect others to do so as well, due to ongoing macroeconomic and political uncertainty despite high prices for the precious metal, the World Gold Council (WGC) said in its annual survey.

— The survey, which was conducted in February-April and included a total of 69 responses, showed that 29% of central banks expected their own gold reserves to increase in the next 12 months.

— This is the highest level since the WGC, an industry body whose members are global gold miners, began the survey in 2018 and compares with 24% in 2023.

— The WGC said 81% of respondents expected global central bank gold reserves to increase over the next 12 months compared with 71% a year ago.

— While in prior years, gold's "historical position" was the top reason for central banks to hold gold, this factor dropped to fifth among WGC survey responses this year.

— The top reasons given for the increases now are "long-term store of value or inflation hedge," "performance during times of crisis" and "effective portfolio diversifier."

— Some 41% of 58 respondents listed domestic storage as the vaults where their gold reserves are kept, compared with 35% in 2023. However, the Bank of England remains the most popular location listed in 55% of the responses.

US, EU ANTI-SUBSIDY ACTION: MECHANISM TO VERIFY TAX REFUNDS IN THE PIPELINE

The Finance Ministry and the Commerce and Industry Ministry are working on an institutional mechanism to verify tax refunds given to exporters under the government's key duty remission scheme to steer clear of countervailing duties imposed by top importing countries such as the European Union and the US, a government official said.

— This comes after the US and EU last year imposed countervailing duties (CVDs) on paper file folders, common alloy aluminium sheet and forged steel fluid following an anti-subsidy investigation. CVDs are tariffs on imported goods that are imposed to offset subsidies given by the exporting country's government, aimed at protecting the domestic industry.

— The need for a new verification method emerged after the US sought clarity on India's method for verification of the rates provided to the exporters under the government's RoDTEP Scheme. The RoDTEP rates are decided by the commerce ministry based on the recommendation made by a committee headed by former Commerce and Home Secretary GK Pillai.

— The RoDTEP scheme, announced in January 2021, refunds embedded duties and taxes, such as VAT on fuel used in transportation, mandi tax and duty on electricity. It replaced the WTO-incompatible Merchandise Exports from India Scheme (MEIS) scheme, which had faced several challenges from WTO members.

— The RoDTEP scheme operates under a budgetary framework and for FY 23-24, Rs 15,070 crore was allocated to boost exports of items such as pharmaceuticals, organic and inorganic chemicals and articles of iron and steel among other items.

— Europe and the US are among India's largest trade partners. India's exports to the US in FY24 stood at $77 billion and about $86 billion to Europe.

'NEARLY 60 TIMES JUMP IN SILVER IMPORTS FROM UAE UNUSUAL'

A near 60 times jump in silver imports during the last financial year from United Arab Emirates (UAE) is unusual since the West Asian country does not produce silver and the import jump may be indicative of a breach in rule of origin finalised by India and UAE under the free trade agreement that came into force in May 2022, a report by think tank Global Trade Research Initiative (GTRI).

— The think tank headed by former trade officer Ajay Srivastava said that Silver imports from the UAE increased by 5.853 per cent, from $29.2 million in FY23 to $1.74 billion in FY24, due to India charging an 8 per cent duty under UAE trade deal versus a 15 per cent MFN tariff on imports from other countries.

— "However, this trade is unusual because the UAE does not produce silver; it imports large silver bars, melts & converts these into silver grains. A check with global refiners will show that value addition in such a process is much less than 1 per cent as opposed to 3 per cent required under the FTA. Despite this, traders claim and the UAE authorities certify a 3 per cent value addition to meet CEPA rules of origin," Srivastava said.

— GTRI said a robust monitoring mechanism should be established to track import volumes and values, ensuring quick policy responses to unusual spikes and rigorous verification of the claimed value addition by Dubai based refiners in gold and silver imports to ensure compliance with rules of origin under the trade deal.

For Your Information:

— Most Favoured Nation is a treatment accorded to a trade partner to ensure non-discriminatory trade between two countries vis-a-vis other trade partners. The importance of MFN is shown in the fact that it is the first clause in the General Agreement on Tariffs and Trade (GATT). Under WTO rules, a member country cannot discriminate between its trade partners. If a special status is granted to a trade partner, it must be extended to all members of the WTO.

— The WTO rules allow discrimination in certain cases like in cases when a country signs free trade agreements in a region. In that situation, a country may grant special favours and trade concessions to a country as compared to non-member countries of that group.

TRADE TRAPEZE

After a rough 2023-24, when India's merchandise exports tanked 3.1% to around $437 billion, trade tides appear to be turning. The last two months have recorded an expansion in outbound shipments with the momentum picking up from a 1.1% rise in April to a 9.1% uptick in May. Some of this reversal had begun in the January to March quarter, when exports grew 4.9% to a seven-quarter high of over $120 billion, belying worries about the disruptions in the Red Sea route since late 2023. Imports as well as exports have risen in four of the last five months now. With the

European Central Bank slashing interest rates this month after a long hawkish stance post-COVID-19, exporters and trade officials are hopeful that its peers in key markets would follow suit and help shore up demand for their produce. But with prices of some industrial commodities such as metals as well as food items rising in recent months, those hopes need to be tempered. The U.S. Federal Reserve has scaled back expectations, stating that only one rate cut is likely through this calendar year.

It is heartening that 20 of India's top 30 export items have outperformed last May's export tallies this year, compared with just 13 items recording a rise in April. The sectors that recovered in May include employment-intensive ones such as apparel, man-made yarn, and engineering goods. Worryingly, spice shipments slipped by a sharp 20.3%, while marine products tanked again. Spices and shrimp exports were likely hit by some negative reports in key markets about quality and workplace standards, respectively, and more must be done to counter what has been termed a misplaced narrative. On the other hand, May's import bill hit a seven-month high of $61.9 billion, widening the trade deficit to $23.8 billion, 25% over April's gap. A record $13.2 billion deficit in petroleum products fuelled this gap, with imports worth $20 billion mostly linked to April's average oil price of $89 a barrel. Oil prices have eased since then, but warrant close monitoring in an import-dependent country. Officials have downplayed concerns about rising deficits, arguing that import demand will outstrip demand for India's exports, as it is growing faster than the world. Moreover, rising services exports and forex inflows from global investments shall help offset the gap, along with import substitution efforts. The latter assumption could prove tricky — foreign direct investment inflows have declined for three years, earnings guidance from IT services' majors has been far from optimistic, and private investments to substitute imports remain sluggish. Rather than banking on intangibles and imponderables, the Centre must revitalise its schemes and efforts to prop up goods exports, with enhanced budgetary outlays to boot.

MOVE AHEAD

Revenues from the Goods and Services Tax (GST), which completes seven years at the end of this month, hit a record high of ₹2.1 lakh crore in April that typically sees higher inflows due to a year-end compliance rush. Receipts in May, for transactions undertaken in April, were the fifth highest ever at ₹1,72,739 crore, rising almost 10% from a year ago, compared with a 12.4% uptick in the previous month. This was the slowest rise since July 2021 when the second COVID-19 wave had dented economic activity. In the nearly three years since then, GST revenues have generally grown at least 11%. Compared with the average monthly receipts of ₹1.68 lakh crore in 2023-24, taxes pertaining to the first month of this fiscal are 3% higher. Although gross revenues from domestic transactions grew 15.3%, accelerating from a 13.4% rise a month earlier, revenues from goods imports dipped for the second time in three months. Domestic revenue growth has also been uneven across States, with five recording a decline in May, and eight growing far slower than the national average. However, broader worries about GST revenues being underwhelming, voiced by the Union Finance Minister at a GST Council meeting in late 2021, have now receded.

This is, therefore, an opportune time for the Council, which is meeting this Saturday, to press the pedal on its pending reform agenda to make it a truly Good and Simple Tax as originally envisaged. Meeting for the first time since last October, the Council may have much routine work on its plate, including clarifications related to, and reviews of, past decisions such as the 28% levy on online games and casinos. However, it is hoped the Council will also find time for bigger things such as reviving the plan to rationalise GST's complex, multiple-rate structure. A ministerial group, tasked with this agenda since 2021, must be asked to restart its work expeditiously. A new rate structure

might also entail lower levies on items such as cement and insurance, for instance. A road map is also needed to bring excluded items such as electricity, natural gas, and petroleum products into the GST net to ensure businesses can avail credits for these inputs. Along with easing compliances for smaller firms as promised in the Bharatiya Janata Party's election manifesto, there is room for simplifying the system for all businesses, including large ones which are compelled to register in each State and face varying compliance diktats. Not all of this can be discussed in one go. So, it is most critical that the Council, which is usually expected to meet every quarter but has been convened just six times since 2022, resolves to meet more often.

WHAT IS NEXT FOR THE INDIAN ECONOMY?

The story so far:

The National Statistical Office (NSO) has estimated that India's Gross Domestic Product (GDP) grew 8.2% in 2023-24, outperforming all economic forecasters' projections. The NSO number even surpassed its own advance estimates that had indicated a 7.6% uptick in GDP last year, imputing a 5.9% rise in the January to March 2024 quarter from 8.4% in the third quarter. However, the fourth quarter is now reckoned to have clocked 7.8% growth, a tad slower than an upgraded 8.6% rise in the previous three months. Private consumption, a key metric that the revival of industrial investments hinges on, remained weak but was slightly better than in the first half of the year.

What are the growth prospects for this year?

In its latest monetary policy review earlier this month, the Reserve Bank of India (RBI) has projected a 7.2% GDP growth for 2024-25 as opposed to its earlier estimate of 7%, with retail inflation trending down to 4.5% from 5.4% averaged last year. Initial indicators for the first two months of this year suggest a sedate start. Industrial output growth slowed to a three-month low of 5% in April, as per data released on June 12. Goods and Services Tax (GST) collections, a proxy for consumption, surged to a fresh high of over ₹2 lakh crore in April, thanks to year-end compliances.

While collections in May, based on transactions concluded in April, were healthy too, the growth rate slipped to just under 10%, the lowest since July 2021. But some of this slack could be spurred by the heat waves that have hit several parts of the country this summer, economists reckon. A projected above-normal monsoon is expected to help farm output rebound and perk up the rural economy. "We expect GDP growth for 2024-25 to be around 7.3%-7.4%, with the base effect pulling down the growth," said Bank of Baroda chief economist Madan Sabnavis. Rating agency CRISIL's estimate is a little lower than the RBI forecast at 6.8%, said its chief economist Dharmakirti Joshi.

Would a coalition govt. affect the economy's management and reform momentum?

Following the Lok Sabha election verdict, Prime Minister Narendra Modi has returned to office for a third term as the head of a coalition government this time. There is a broad expectation of continuity in government policy, with the Prime Minister retaining top ministers with their portfolios unchanged, including Nirmala Sitharaman and Piyush Goyal at the helm of key economic ministries of finance, and commerce and industry, respectively. "We expect India's strong medium-term growth outlook to remain intact, underpinned by the government capex drive and improved corporate and bank balance sheets. But upsides to medium-term growth

prospects are likely to be more modest if reforms prove more challenging to advance," said Fitch Ratings director Jeremy Zook.

While "broad policy continuity" is expected in areas such as the thrust on public capex to spur the economy and gradual fiscal consolidation, a BJP-led government that needs "to rely more heavily on its coalition partners" could find it tougher to push contentious reforms, particularly around land and labour, recently flagged as the party's priorities, he noted. Moody's Ratings was not as sanguine about fiscal management prospects as Fitch. The NDA's "relatively slim margin of victory as well as the BJP's loss of its outright majority in Parliament" may delay more far-reaching economic and fiscal reforms that could impede progress on fiscal consolidation, it said in a note. Moreover, it has cautioned that the near-term economic momentum masks structural weaknesses that pose risks to long-term potential growth, such as "high levels of youth unemployment", "weakness in productivity growth" in India's large farm sector that still accounts for 40% of all employment, and the decline in inward foreign direct investment (FDI) flows in each of the past three years.

What should one look for in the full-year Union Budget to be presented next month?

Taking charge of the Finance and Corporate Affairs Ministry this Wednesday, Ms. Sitharaman has said the reforms drive initiated after 2014 with an eye on bolstering India's macroeconomic stability and growth, shall continue. The ministry will kick off Budget consultations with industry and other stakeholders in the coming week. While Ms. Sitharaman signalled that 'ease of living' for citizens will be a key pursuit for the government, industry expects the Budget to address ongoing policy challenges such as reining in inflation, spurring consumption and investments, and untangling knotty taxation issues such as the recently introduced 45-day payment deadline mandate for micro, small and medium enterprises that has inadvertently ended up hurting them.

With the GST Council expected to meet next week, the Budget may also indicate the Centre's plans to pursue rationalisation and reforms of the indirect tax regime that completes seven years on July 1. Some elements of the 100-day agenda items drawn up by ministries should also find space in the Budget, along with more concrete details of initiatives announced in the interim Budget presented before the polls. Ms. Sitharaman, who has recently voiced the need for Indian manufacturing to become more sophisticated and be part of global value chains, may also unveil some steps to catalyse this transition, including a reduction in some of India's high import tariffs. While BJP allies like the Telugu Desam Party (TDP) and the Janata Dal (United) will, of course, expect some measures, or a package, to meet their aspirations for Andhra Pradesh and Bihar, respectively, at a broader level, this administration's first Budget is expected to outline its agenda for this tenure and offer glimpses of the blueprint to make India a developed nation by 2047 that the Niti Aayog has been drawing up. The last few decades of India's economic reforms story show that coalitions have also been effective in driving critical and contentious changes, such as the privatisation drive kicked off by the Atal Bihari Vajpayee government. This Budget could reveal if this coalition-dependent government has a fresh and possibly more consensual approach in mind to deliver on India's reform agenda.

SHOULD RECENT MARKET VOLATILITY BE PROBED?

The story so far:

The Indian stock market witnessed extreme volatility right after the release of the exit poll results earlier this month and on June 4 when the results of the latest Lok Sabha election were declared.

The benchmark indices, the Nifty and the Sensex, have since managed to recover the losses. The Congress alleged that Prime Minister Narendra Modi and Home Minister Amit Shah had manipulated the stock market through their statements to favour certain investors.

What is the controversy about?

The Nifty and the Sensex gained 3.2% and 3.4%, respectively, to hit all-time highs on June 3, the first day of trading after the exit poll results, which were released over the preceding weekend, suggested that the BJP would win a resounding majority in the election. The biggest gainers were stocks of companies that were seen to be close to the government, such as the Adani Group stocks, and stocks of public sector companies which were expected to benefit during Mr. Modi's third term in power. Both the benchmark indices, however, slumped by almost 6% the very next day after the actual results failed to match exit poll predictions. The decline on June 4, which was the worst single-day fall in the stock market since March 2020 in the wake of the COVID-19 pandemic's outbreak in India, wiped out investor wealth worth about ₹30 lakh crore. Prior to the exit poll results, the Prime Minister and the Home Minister had made statements encouraging investors to buy stocks before June 4 in order to benefit after the election results.

What is the Opposition's allegation?

The Congress has alleged that Mr. Modi and Mr. Shah deliberately made comments exhorting retail investors to purchase stocks before the day of the election results and that this was an attempt to manipulate the market to favour certain foreign investors. To back this claim, the party's data wing head Praveen Chakravarthy has drawn attention to the doubling of the value of stocks traded for cash in the market on May 31, the last trading day before the release of the exit poll results. The total value of stocks traded on May 31 was ₹2.3 lakh crore against ₹1.1 lakh crore the previous day. Mr. Chakravarthy has noted that more than half the buying that happened on May 31 came from foreign investors and further added that foreign investors were largely net sellers prior to May 31, when they suddenly turned net buyers of stocks. According to him, the PM's statements encouraging investors to buy stocks before June 4 would have benefited these foreign investors who managed to load up on stocks before the exit poll results gave a sharp 3% bump to the stock market on Monday. The Opposition parties claim that these foreign investors had insider information about the exit poll results. They also add that the foreign investors managed to offload their stocks on Monday to retail investors who were not just late to the party but also suffered huge losses on Tuesday. The Opposition parties have called for a joint parliamentary committee (JPC) to probe the matter.

What do the market regulator's rules say?

The Securities and Exchange Board of India's Prohibition of Fraudulent and Unfair Trade Practices relating to Securities Market (FUTP) Regulations state that "planting false or misleading news which may induce sale or purchase of securities" is illegal. But there are exceptions. Comments on the overall market trend when broadcast to the wider public through mass media such as TV and newspapers, are not considered to be the same as information secretly leaked to certain investors to benefit from a coming market move. If not for such exceptions, it would be impossible for anyone to voice their opinion on the market. So, experts contend that unless, say, an investigation can prove that Mr. Modi acted in collusion with certain investors to boost the market prior to the exit poll results, there is probably nothing illegal about his statement urging investors to buy before June 4.

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How has the Centre responded?

Union minister Piyush Goyal responded to the Opposition's accusations by arguing that foreign investors actually bought stocks at a high price and sold at a low price while Indian investors deftly used the market's volatility to sell high and buy low. NSE data appeared to back this contention as it shows the umbrella category of 'retail investors' were net sellers of stocks on May 31 and June 3, when the market rose, while they were net buyers of stocks worth ₹21,179 crore on June 4, when the markets crashed. Foreign portfolio investors (FPIs), meanwhile, were net buyers on May 31 and June 3 when the markets went up and were net sellers on the day the markets crashed. Some market experts, however, point to the fact that the NSE's 'retail investors' category includes not just small ordinary retail investors but also non-resident Indians (NRIs), HUFs, individual/proprietorship firms and partnership firm /Limited Liability Partnership (LLP) that encompass the investment vehicles used by ultra high net worth and high net worth individuals. These experts observe that shares worth a net amount of more than ₹21,000 crore were bought by 'retail investors' from FPIs and domestic mutual funds and that such heavy buying was unlikely to have been done by small 'retail investors' alone.

Further, while FPIs bought stocks worth ₹96,155 crore on May 31, the highest-ever in history, they also sold stocks worth ₹93,977 crore on the same day. In other words, despite the sudden rise in trading activity, foreign investors were not huge net buyers of stocks on May 31. This is, however, not to categorically say that there was no mischievous activity during the day. Data on net purchases or sales may not reflect how individual foreign investors with insider information may have benefited. Further, whether an investor group profited or lost money can also depend on exactly when during a trading session they managed to buy or exit a stock regardless of whether the indices closed higher or lower that day. Only a thorough investigation based on granular data can offer an answer to whether there was manipulation.

WHY DIRECT SEEDING OF RICE (DSR) IS YET TO PICK UP IN PUNJAB

The Punjab government has been actively promoting the direct seeding of rice (DSR), or 'tar-wattar' technique, This can reduce water use by 15% to 20% (the traditional puddling method requires 3,600 to 4,125 litres of water to grow a single kilo of rice). Moreover, DSR requires less labour and matures 7 to 10 days faster, giving farmers more time to manage paddy straw.

Despite these benefits, and government incentives (Rs 1,500 per acre, this year), this technique is yet to see widespread adoption in Punjab. Last year, only 1.73 lakh acres of the 79 lakh acres under paddy cultivation in Punjab saw the use of this technique. Even the government's target of bringing 7 lakh acres under DSR this year represents less than 10% of Punjab's total rice acreage.

Here is what might be holding the DSR technique back.

How DSR works

Traditionally, paddy farmers prepare nurseries where seeds are first sown. After 25-35 days, the young seedlings are uprooted and replanted, in the flooded main field. While this method is labour and water-intensive, it is known to maximise yields and maintain better crop health.

DSR, as the name suggests, requires no nursery preparation or transplantation. Paddy seeds are directly sown, roughly 20-30 days prior to when they would have been transplanted. The field is irrigated and laser leveled prior to the seeding process which is carried out using a seed drill or

lucky seeder. Seed treatment is crucial, with seeds soaked in a fungicide solution for eight hours, then dried for half a day before sowing.

The first round of irrigation is carried out 21 days after sowing, followed by 14-17 more rounds at 7-10 day intervals, depending on soil type and the quality of the monsoon. The final irrigation takes place 10 days before harvest. The traditional method requires 25-27 irrigations in total.

Soil texture is key

Experts emphasise that soil suitability is crucial for the successful implementation of DSR. There are two factors here.

First is the texture of the soil. Farmers should avoid DSR in light-textured soils — it is more suitable for heavy or medium-to-heavy-textured soils. This is primarily because light-textured soils do not retain water well. A senior officer in the Punjab Agriculture Department told The Indian Express that in the race to avail the government incentives, some farmers use DSR in unsuitable soils, leading to the need for irrigation every second or third day. This completely counteracts the water-saving benefits of DSR, and in fact, ends up guzzling down more water.

Simply put, heavy-textured soils contain more clay and less sand, whereas light-textured soils have less clay and more sand. Dr M S Bhullar, Principal Agronomist at the Punjab Agriculture University (PAU), Ludhiana, who headed the development of the 'tar wattar' DSR technique, told The Indian Express that only 20% of Punjab's soil is light-textured.

The Majha (northwestern Punjab) and Doaba (northeastern Punjab) regions predominantly feature heavy-textured and medium-to-heavy-textured soil, whereas Malwa (central and southern Punjab contains pockets of heavy-textured, medium-textured, and light-textured soils.

Importance of iron content

The iron content of the soil also determines the suitability of DSR. Soil with severe iron deficiency, and weed problems must not be cultivated using this technique.

In fact, experts say that in several places, even medium-textured soils are unsuitable simply due to their lack of iron. This is likely to be more of a problem in fields previously cultivated with crops such as cotton, maize, and sugarcane.

Experts recommend that soils with plant-available iron are ideal for DSR. In case iron supplements are being used, farmers should apply ferrace iron, which is green-coloured and not oxidised, rather than oxidised iron, which is brown in colour.

Lack of iron content can severely impact yields and lead to major financial losses for farmers. Sometimes, farmers might even have to transplant the crop anyway, after a month or so, leading to DSR losing its labour-saving benefits.

Path forward for DSR

A basic lack of awareness and understanding is holding DSR back. After using the method on unsuitable soil, farmers do not get the expected yields. They then developed apprehensions regarding DSR and reverted to their traditional puddling method. Crucially, negative feedback spreads quickly by word of mouth, further dissuading other farmers for whom DSR might have been ideal.

Experts say that comprehensively educating farmers is key to enable the adoption of a new technique, and departure from age-old, tried and tested methods. They suggest that extensive training and a ready helpline be provided, to handhold the farmers through the whole process, from pre-sowing to harvesting. This can instill confidence among farmers regarding DSR's efficacy.

Additionally, if farmers incur losses during the initial years of adoption, adequate compensation should also be provided, so as to not disincentivise them from trying again.

HOW DEMAND FOR CEREALS IN INDIA IS CHANGING

India's production of cereal grains has gone up over 1.5 times in the last two decades, according to the agriculture ministry.

But a rising share of that is going not for direct human consumption, but for use in processed form (as bread, biscuits, cakes, noodles, vermicelli, flakes, pizza base, etc) or for making animal feed, starch, potable liquor and ethanol fuel. This is evidenced by data from official household consumption expenditure surveys (HCES).

The National Sample Survey Office's latest HCES report reveals a steady decline in the quantity of cereals consumed by an average person per month – from 12.72 kg to 9.61 kg in rural and from 10.42 kg to 8.05 kg in urban India – between 1999-2000 and 2022-23. The overall per capita drop, using weights based on the rural-urban distribution of the HCES sample households, has been from 11.78 to 8.97 kg during this period.

Multiplying the above weighted average over 12 months with the country's population yields the total annual consumption of cereals by Indian households, in direct or processed-at-home form. This has registered only a mild jump, from 148.4 million tonnes (mt) in 1999-2000 to 153.1 mt in 2022-23 and actually falling over the last decade.

While direct household consumption has stagnated, even dipped, this isn't so with production, which has significantly increased from 196.4 mt in 1999-2000 to 303.6 mt in 2022-23. The gap between officially estimated cereal production and HCES-based household consumption, too, has widened from hardly 48 mt in 1999-2000 and 29.5 mt in 2004-05 to nearly 151 mt in 2022-23.

Where is this excess production going?

Part of it is getting exported, i.e. going out of the country. In 2021-22 (April-March), India shipped out a record 32.3 mt of cereals, including 21.2 mt rice, 7.2 mt wheat and 3.9 mt other grains (mainly maize). Even in 2022-23, cereal exports totaled 30.7 mt: 22.3 mt of rice, 4.7 mt of wheat and 3.6 mt of other grains.

The 31-32 mt of exports would, however, have accounted for just a fifth of the 150 mt-plus difference between production and direct household consumption of cereals in 2022-23.

A second source of difference would be cereals consumed by households in processed form – bread, biscuits, noodles, etc. Even assuming this to be 25% over and above direct cereal consumption, it comes to an additional 38 mt or so.

A third source is cereal grain used for manufacture of feed or industrial starch. The agriculture ministry has pegged India's maize production in 2022-23 at 38.1 mt. The bulk of it – 90%, if not more – would have been used as the primary energy ingredient in poultry, livestock and aqua feed

or for wet-milling and conversion into starch, which has applications in the paper, textile, pharmaceutical, food and beverage industries.

The production of "other cereals" – maize, barley and millets such as bajra (pearl millet), jowar (sorghum) and ragi (finger millet) – at 57.3 mt. As against this, the direct consumption of these coarse grains in Indian households worked out to below 5 mt. Much of their consumption would be in indirect form – as milk, egg and meat after being fed to cows, buffaloes and layer/broiler poultry birds.

Feed and starch manufacturing apart, cereal grains are also fermented into alcohol (after milling and converting their starch into sucrose and simpler sugars) and further distilled into about 94% rectified/industrial spirit or 99.9% ethanol.

In recent times, many sugar mills have installed multi-feed distilleries, enabling them to run on cane molasses or juice/syrup during the crushing season (November-April) and grain (broken/damaged rice, maize and millets) in the off-season (May-October). This has received an impetus from the government's programme for blending up to 20% of ethanol in petrol.

In other words, cereals are today not just food and feed, but also fuel grains.

The unexplained surplus

Adding exports of 32 mt, usage in processed food form (38 mt) and diversion for feed, starch making and fermentation purposes (50-55 mt) — these are very rough estimates — to direct household consumption of 150-155 mt will take the total yearly demand for cereals to 275-280 mt at best.

That's way below the estimated 300 mt-plus domestic cereal output. The difference is the surplus grain being mopped up by government agencies and accumulated in the Food Corporation of India's warehouses. In the 2022-23 crop year (July-June), around 56.9 mt of rice and 26.2 mt of wheat got procured, more than the total annual cereal requirement of 59-60 mt for the public distribution system (PDS).

Under the National Food Security Act, some 813.5 million persons are being given 5 kg of wheat or rice per month through the PDS free of cost (the issue price was Rs 2 and Rs 3/kg for the two respectively till December 2022). The 5 kg entitlement for these beneficiaries covers more than half of the monthly per capita cereal consumption of 9.61 kg in rural and 8.05 kg in urban India as per the HCES for 2022-23.

If the agriculture ministry's cereal output estimates are right, the country is producing at least 25 mt of excess grain every year, thereby exerting downward pressure on market prices, if not adding to government stocks.

But given the recent experience of high cereal inflation (8.69% year-on-year in May), notwithstanding ban/restrictions on exports, and depleting stocks in government warehouses (16-year-low for wheat on June 1), questions can be raised on the veracity of the official production estimates themselves.

IRDAI IMPROVES HEALTH COVER EXPERIENCE

The insurance landscape in India has seen a major transformation over the last few years, thanks to the consistent efforts of the Insurance Regulatory and Development Authority of India (IRDAI)

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which has been efficiently aided by insurers turning it into a concerted effort by all stakeholders. In another landmark move, the regulator came out with a master circular with several consumer-centric reforms in health insurance.

The latest reform is no claim can be rejected due to the lack of documents. To simplify claim process, IRDAI mandated the necessary documents be sought by the insurer at the time of underwriting. Besides, the customers of general insurers are allowed to cancel policy anytime and be refunded for the unexpired policy period, while insurers can only cancel the policy on the grounds of fraud.

Hassle-free claims

The IRDAI had earlier directed while cashless claim must be cleared within a three-hour limit, the decision on cashless authorisation by the insurer has to be made within one hour of the claim request. The Master Circular, which shall be reviewed every year, also lists a number of other initiatives taken by the regulator recently.

The IRDAI circular also mandated all insurers should strive to achieve 100% cashless claim settlement in a time-bound manner and ensure claim settlement through reimbursement mode is done only in exceptional circumstances. It added the ratio of reimbursement claims should be kept to the bare minimum. This directive is in line with IRDAI's recent 'Cashless Anywhere' directive which asked insurers to settle claims in cashless mode even in those hospitals not in their list of network hospitals.

The IRDAI has asked insurers to immediately put in place necessary systems and procedures, by July 31. It said if required, the insurers could put in place dedicated help desks at hospitals to deal with cashless claim requests within stipulated time-frame. Moreover, they should provide digital pre-authorisation to policyholders to facilitate the claims. To address this, the IRDAI said in case the claim is not settled in three hours, any additional costs charged by the hospital would be borne by the insurer from shareholder's fund.

Impact on sector

The only way this directive can be implemented is through better coordination between insurers and hospitals. Not only operational processes would have to be improved, haring of medical records between different stakeholders would have to be more streamlined to help insurer to take a decision on the claim.

Medical record digitisation is already happening via the National Health Claims Exchange, which is facilitating a more transparent and smooth exchange of information.

Standalone efforts won't be able to achieve this. It requires a concerted effort on the part of the entire healthcare ecosystem.

The good news is insurers have been showing positive intent to support the regulator in all its efforts to improve the insurance experience for customers. And, hospitals would surely get on board considering it would ensure faster payouts for them too. Timely settlement will eliminate most glitches and go a long way to better healthcare experience of patients and caregivers.

The IRDAI added if policyholder dies during treatment, the insurer must immediately process the request for claim settlement and get the mortal remains released from the hospital immediately.

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This will surely offer the grieving family some semblance as they deal with a tragic loss. The norms are consumer-centric and prioritise policyholders' welfare above everything else.

This commendable move is poised to revolutionise the health insurance landscape, ensuring timely and hassle-free claim settlements, enhancing customer satisfaction, and providing inclusive and affordable health insurance solutions.

WHAT IS SWM CESS AND WHY IS IT LEVIED ON WASTE GENERATORS?

The story so far:

The Bruhat Bengaluru Mahangara Palike (BBMP) has proposed a Solid Waste Management (SWM) Cess of ₹100 per month for each household. While the proposal has sparked debate and criticism among residents and stakeholders, it is important to understand the rationale behind SWM cess, its intended use, and the broader context of solid waste management challenges faced by Urban Local Bodies (ULBs) in India.

Urban Local Bodies (ULBs) levy user fees or SWM cess as per the provisions of Solid Waste Management Rules, 2016. According to these guidelines, ULBs must collect user fees/cess for SWM services provisions provided. ULBs typically charge about ₹30-50 per month as SWM cess, which is collected along with property tax. ULBs are now considering revising these rates and imposing higher charges on bulk waste generators to meet a portion of the costs incurred in providing SWM services.

What are the costs?

Offering SWM services is complex and resource-intensive. ULBs typically deploy about 80% of their manpower and up to 50% of their annual budgets to provide SWM services to city residents.

In a city like Bangalore, an urban resident generates about 0.6 kg of waste per day, totalling 0.2 tonnes per person per year. Overall, Bangalore generates about 5,000 tonnes of solid waste per day. Managing this volume of waste requires around 5,000 door-to-door waste collection vehicles, 600 compactors, and about 20,000 Paurakarmikas.

SWM services comprise four components: collection, transportation, processing and disposal. ULBs package collection and transportation together, and processing and disposal together. Collection and transportation are resource and labour-intensive and come up to 85-90% of the SWM budget, whereas only about 10-15% is spent on processing and disposal of waste.

What are the challenges?

Solid waste generated in Indian cities consists of about 55-60% wet biodegradable material and 40-45% non-biodegradable material. The portion of recyclable material in the dry waste is minimal, only about 1-2%, with the rest being mostly non-recyclable and non-biodegradable waste. Although 55% of the wet waste can be converted into organic compost or biogas, the yield is as low as 10-12%, making both composting and biogas generation from solid waste financially unviable. Typically, operational revenue from waste processing facilities covers only about 35-40% of operational expenses, with the rest subsidised by the ULB.

Apart from financial challenges, ULBs face other challenges associated with SWM services, such as extra work of clearing open points and drains, preventing open littering, seasonal changes in waste generation, and sweeping operations. Additionally, the disposal of non-compostable and

non-recyclable dry waste, such as single-use plastic, textile waste and inert materials, is expensive since the material needs to be shipped to cement factories or waste-to-energy projects located about 400-500 km from cities.

Large cities like Bangalore spend about 15% of their budget—about ₹1,643 crore out of ₹11,163 crore — whereas the revenue from SWM services is almost negligible at ₹20 lakh per year. Smaller cities tend to spend up to 50% of their budget but also end up with almost negligible revenue. Hence, ULBs charge SWM cess to cover a portion of the costs.

What is the solution?

Although collection and transportation of waste generate no revenue, several strategies can reduce overall expenditure on SWM and lower user charges. These are segregation of waste at source, reducing single-use plastic, decentralised composting initiatives, Information, Education and Awareness (IEC) to prevent open littering, and asking bulk waste generators to process their own waste.

FASTER IMMIGRATION AT DELHI AIRPORT FOR INDIAN NATIONALS, OCIS

Indian nationals and Overseas Citizens of India (OCIs) can now experience a faster immigration process at the Delhi airport and, in due course, at other major airports in India with the implementation of a biometrics-based system.

Union Home Minister Amit Shah Saturday inaugurated the 'Fast Track Immigration – Trusted Traveller Programme' (FTI-TTP) system at Terminal 3 of the Indira Gandhi International Airport. The facility will be extended to the airports at Mumbai, Chennai, Kolkata, Bengaluru, Hyderabad, Kochi and Ahmedabad, apart from 13 other airports in phases, said the Ministry of Home Affairs (MHA). It will later be extended to foreign nationals.

— The system, according to the MHA, will capture passenger biometrics that will be maintained in a database. This will be used to carry out real-time verification of travellers who can then pass through automated gates with minimal human intervention.

— "The objective of this programme is to make international travel easy and secured by developing world-class immigration facilities through an accelerated immigration pathway for international travellers screened through automated gates (e-Gates)," it said.

— According to MHA, the FTI-TTP system will be implemented through an online portal. The Bureau of Immigration will be the nodal agency for fast-tracking immigration of various categories of travellers under this programme.

— After verification, a white list of "trusted travellers" will be generated and sent to the automated gates. The biometrics of the "trusted traveller" will be captured at the Foreigners Regional Registration office or at the time of passage through the airport. The TTP registration will be valid till the validity of the passport or five years, whichever is earlier, and will be renewed thereafter.

'DIGI YATRA COULD BE EXPANDED TO HOTELS, RAIL TRAVEL, PUBLIC PLACES'

Digi Yatra, a check-in service at airports based on facial recognition technology, may be implemented at hotels and public places such as historical monuments, says the chief executive officer of the Digi Yatra Foundation, Suresh Khadakbhavi. A prototype for this use-case has been

developed and discussions are on with government agencies such as the Tourism Ministry, he adds.

"The vision is to create a travel stack for seamless movement across India," Mr. Khadakbhavi said in an exclusive interview with The Hindu while talking about the future use-cases of Digi Yatra.

"This would enhance travel experience for a tourist who has to produce a passport for check-in at a hotel or at police stations for verification," he said. Digi Yatra could also be used for rail travel, and an initial discussion has also been held with the Railway Ministry. Nationals of certain countries such as Pakistan are required to report their arrival and intended departure at each place of stay within 24 hours at the nearest police station. Tourists of other nationalities who hold a visa for a period of more than 180 days, are also required to register at the Foreign Regional Registration Office (FRRO).

Mr. Khadakbhavi explained that extending Digi Yatra to hotels and public places would prevent data leakage as people often tend to share unencrypted form of identity documents through photocopies and screenshots, whereas Digi Yatra ID does not carry any personally identifiable information. The Digi Yatra Central Ecosystem only saves a hash value or a numerical value that identifies the content of the file so that none of the four data items shared by passengers at the time of registering on the app (name, Aadhaar, face scan, and passport number) can be leaked anywhere.

Launched in 2022

The Digi Yatra initiative is digital processing of air travellers which uses their biometrics such as a facial scan instead of a boarding pass to enable paperless movement through various checkpoints at an airport. The initiative was rolled out at airports in December 2022, and today covers 14 airports while 15 more airports will be included by the end of 2024.

The primary aim of the initiative at the time its policy document was launched in 2017 was to improve passenger throughput (or number of passengers passing through various checkpoints) at airports. This would achieve the objective of enhancing airport infrastructure needed to cater to increasing passenger volumes by ensuring more efficient airport operations, alongside physical expansion of airports in the country. But the proposed use-case for hotels and other public places implies that the role for Digi Yatra could extend beyond air travel. The Digi Yatra Foundation itself is a not-for-profit private company which is a consortium of five private airports that have a combined shareholding of 74%, and the Airports Authority of India which holds the remainder 26% share.

At airports, so far Digi Yatra e-gates were deployed primarily at entry gates outside airports as well as security screening queues inside the passenger terminal building. Now, they increasingly can be seen at more touch-points such as boarding gates as well as baggage drops. "Digi Yatra was envisaged for all the touchpoints, such as airport entry gates, check-in, baggage drop and boarding gates. But airports rolled them out for airport entry gates and security checkpoints, and some have started to also implement it at baggage drop," Mr. Khadakbhavi said explaining this would eliminate the need for producing boarding passes wherever passengers are required to do so.

On the issue of privacy concerns raised by its policy document, such as access to data for third-party vendors and the circumstances under which its mandatory data purge within 24 hours can be set aside, the CEO said that the foundation will soon be releasing a revised policy document to address language issues that have raised concerns over possible misuse.

On concerns over lack of consent from users at airports where enrolments are being carried out on the day of travel, Mr. Khadakbhavi blamed "overenthusiasm" among private staff in enrolling travellers and that they were in conversation with airports to ensure their staff is adequately sensitised.

GLOBAL GENDER GAP INDEX 2024

The 2024 edition of the Global Gender Gap Index places India at 129 out of the 146 countries it surveyed. This puts India at the 18th position from the bottom. For comparison, of the 156 countries included in 2021, India was at the 17th position from the bottom. Thus, overall, India's ranking has remained in the bottom 20 over years.

The Global Gender Gap Index is released annually by the World Economic Forum (WEF).

— Like all indices, the Global Gender Gap Index, first introduced in 2006, is a précis measure. It is a combination of four different sub-indices — economic participation and opportunity, educational attainment, health and survival and political empowerment — each summarising multiple indicators. The index lies between 0 and 1, with 1 denoting complete parity.

— Like all indices, it does not include everything that matters for gender equality, but focuses only on a few key measures. It should not be seen as a comprehensive treatise on gender equality, but as a useful pointer or a highlighter of key summary statistics that can be reliably measured and tracked.

— The 2024 report shows that on "Health and Survival Score", India's value is at 0.951 which means that 95.1 per cent of the male-female gap has been closed. Similarly, in educational attainment, 96.4 per cent of the gap has been closed.

— India has done well on these indicators but since several other countries have done better, India is at 112th position in the educational ranking and at 142nd position in the health rankings among 146 countries.

— On economic participation, India's score at 39.8 per cent places it at the 142nd position among 146 countries. While this is an improvement since 2021 (when it was 32.6 per cent), it is very low in absolute terms, and is lower than the 2012 score of 46 per cent.

— To put this score in perspective, countries with the lowest levels of economic parity are Bangladesh (31.1 per cent), Sudan, (33.7 per cent), Iran (34.3 per cent), Pakistan (36 per cent), India (39.8 per cent), and Morocco (40.6 per cent).

— In political participation, even though India has closed only 25.1 per cent of the gap, its global rank is 65. This reflects the fact that while the rest of the world has made significant forward strides towards gender equality in the economic, educational and health spheres, the global progress on gender equality in political participation remains low.

— We should note that India's position was at 51 in 2021 with a value of 27.6 per cent, implying that India's score has worsened over the last two years.

— There is ample research documenting the staggering economic costs of side lining women. An OECD estimate reveals that gender-based discrimination in social institutions could cost up to $12 trillion for the global economy, and that a reduction in gender discrimination can increase the rate of growth of GDP.

— Internalisation of this understanding would mean that gender equality has to be mainstreamed into economic policy making, rather than viewed as a residual concern to be tackled later, as an afterthought.

THE SHADOW OF CASTE

"A recent working paper of the World Inequality Lab has reignited discussion on the widening gap between the rich and poor. Inequality in India, however, transcends the dichotomy between the haves and the have-nots, as caste-based inequalities are among the defining features of the country's socioeconomic framework"

— " Metrics like the Gini coefficient and percentile ratio serve as crucial tools for assessing economic inequality. By examining these metrics for the periods of 2017-18 and 2022-23, we explored the changes in consumption inequality both overall and within social groups such as the Scheduled Tribes (ST), Scheduled Castes (SC), Other Backward Classes (OBC), and the General category using the Periodic Labour Force data."

— "The overall Gini coefficient decreased from 0.359 in 2017-18 to 0.309 in 2022-23, indicating a reduction in overall income inequality during this period by 0.050. The ST category saw its Gini coefficient decrease from 0.322 to 0.268, a 0.054 point drop, signalling improvement in the equitable distribution of consumption within this community."

— "Nonetheless, digging deeper into consumption patterns reveals underlying economic disparities among India's social groups, where ST and SC communities endure the most pronounced discrepancies."

— "India has made remarkable strides in lifting millions out of multidimensional poverty, yet inequality among various caste groups persists. Despite the Constitution's abolition of caste discrimination and the launch of affirmative action programmes, the shadow of caste continues to shape economic realities."

— "The Centre has enacted numerous policies to mitigate these disparities, including reservation, rural development initiatives, and direct benefit transfers. While these measures have yielded some progress in narrowing the gap, substantial challenges remain."

— "Disparities in consumption patterns among different socioeconomic groups reflect potential disparities in income, access to resources, or purchasing power. Efforts should concentrate on augmenting income generation and consumption abilities among the lower deciles, particularly within the ST and SC communities. This is also essential for fostering social harmony and economic stability across society."

— "Continued monitoring of trends and targeted interventions addressing specific socio-economic challenges faced by different groups are necessary to ensure sustained progress towards greater economic equity."

LIFE & SCIENCE

ELECTROMAGNET: DRIVEN BY CURRENT

Invented in 1824 by the British physicist William Sturgeon, electromagnets are a fixture of modern life, appearing in loudspeakers, motors, magnetic resonance imaging (MRI) machines, maglev trains, and particle accelerators.

When an electric current flows through a wire, it creates a magnetic field around the wire. So when the wire is coiled, the magnetic field becomes concentrated in the coil's hole. This is an electromagnet: a device in which an electric current produces the magnetic field. When the wire is coiled around a magnetic material, the material — called the core — amplifies the strength of the magnetic field.

This is because ferromagnetic metals like iron already contain small magnetic fields inside their bulk produced by its atoms. Because these fields point in random directions, the fields cancel themselves out. When the iron is used as the core in an electromagnet and a current is passed, the magnetic field it produces penetrates the iron's bulk and forces the tiny fields to align along the external field's direction. This way, the domains' fields add to the external field, producing a stronger field overall.

A magnetic field will be produced as long as a current flows through the coil. When the current is switched off, some core materials remain weakly magnetised. In a superconducting electromagnet, such as in an MRI, superconducting wire is coiled around a core to produce magnetic fields of up to 30 tesla (600,000-times as powerful as the earth's). In Bitter electromagnets, current flows in wires coiled through a helical stack of electromagnets, producing magnetic fields of up to 40 tesla.

PROPOSAL FOR WARNING LABELS ON SOCIAL MEDIA IS TIMELY, BUT ONLY THE FIRST STEP

Being young is not easy. Academic and peer pressure apart, the rabbit hole of algorithm-determined content can lead one down to one's deepest insecurities. In 2019, the World Health Organisation warned of a global mental-health crisis, affecting nearly one billion individuals, including 14 per cent of adolescents. Studies have established a correlation between social-media usage and the possibility of mental-health afflictions. In the US, for instance, adolescents who use social media for more than three hours a day have double the risk of anxiety and depression. The sharp upward curve, especially among the young, that has prompted US Surgeon General Vivek Murthy to call for warning labels on social media, therefore, is timely. But it could only serve as the first step towards addressing what is, in essence, a global crisis. More needs to be done to protect the young from online abuse, harassment and exposure to inappropriate content.

A warning has its utility, though. In 1975, nearly a decade after the Federal Cigarette Labelling and Advertising Act came into force in the US, the Indira Gandhi government passed a legislation called The Cigarettes (Regulations of Production, Supply and Distribution) Act, 1975, which made statutory health warnings on all tobacco products mandatory. What it managed to create was better awareness among users, and, over time, better hygiene. Without any curbs, the social-media crisis is poised to escalate. As the world's second-largest smartphone market with a high

internet penetration, it is especially true for the Indian landscape, where there is a sizeable demographic under the age of 18.

For the young, however, a warning can sometimes act as an invitation. It also runs the risk of putting the onus of protecting the children entirely on parents. In an opinion piece in The New York Times, Murthy writes, "These harms are not a failure of willpower and parenting; they are the consequence of unleashing powerful technology without adequate safety measures, transparency or accountability." For parents, the difficulty of social media is two-pronged, beginning with the digital gap of a large section with the sophistication of these platforms and extending to the impracticality of keeping a constant tab on their children's online activities. It makes legislation that is binding on Big Tech, similar to the Digital Service Act introduced by the European Union in February this year, an urgent requirement. It is only a combination of warning, legislation that bars targeted advertising or collecting sensitive data, and parental guidance that can protect the young and the vulnerable from the pernicious fallouts of social media.

WHAT IS CLAUDE 3.5 SONNET AND HOW IS IT BETTER THAN GPT-4O, GEMINI-1.5 PRO?

What is Claude 3.5 Sonnet?

Claude 3.5 Sonnet is a large language model (LLM), and is part of the family of LLMs which is being developed by Anthropic. These models are known as generative pre-trained transformers, which means they have been pre-trained to predict the next word in large amounts of text. Claude 3.5 Sonnet is the predecessor to the Claude 3 Sonnet introduced in March of this year.

Claude 3.5 Sonnet is likely to be the middle model (based on parameter size) in the upcoming series of AI models by Anthropic — the smallest and biggest models are yet to be released. Anthropic has said Claude 3.5 Sonnet outperforms Claude 3 Opus by a huge margin. The new model is claimed to be twice as fast as the Claude 3 Sonnet.

How does Claude 3.5 Sonnet perform?

According to Anthropic, Claude 3.5 Sonnet sets some new industry benchmarks in capabilities such as coding proficiency (HumanEval), graduate-level reasoning (GPQA), and undergraduate-level knowledge (MMLU).

The company claims that the new model has also shown significant improvement in grasping nuance, humour, and complex instructions. Claude 3.5 Sonnet is exceptional at writing high-quality content with a natural and relatable tone, according to Anthropic.

Based on the benchmark scores shared by Anthropic on its official website, Claude 3.5 Sonnet seems outstanding. It has outdone GPT-4o, Gemini 1.5 Pro, and Meta's Llama 3 400B in seven out of eight overall benchmarks. However, benchmark scores should not be taken too seriously — many AI startups have been accused of cherry-picking scores under categories that make them look good.

What about Claude 3.5 Sonnet's vision capabilities?

Anthropic claims that Claude 3.5 Sonnet is its strongest vision model. A vision model in AI is a model capable of interpreting and analysing visual data such as images and videos.

According to the company, the improvements in Claude 3.5 Sonnet are most noticeable for tasks that require visual reasoning such as decoding charts and graphs. The model is also capable of

accurately transcribing text from imperfect images. For instance, The Indian Express clicked a random picture from Claude's iOS app and asked about the location. The model immediately identified the location by reading a poster and text on the distant wall.

This ability to transcribe is what makes Claude 3.5 Sonnet beneficial for retail, logistics, and financial services, where AI may rely more on insights from an image, graphic, or illustration than from text, according to Anthropic.

A 'UNIVERSAL' EQUATION PREDICTS HOW OFTEN BIRD, BAT, INSECT WINGS BEAT

Almost all animals that fly through the air and many that swim through water have evolved to flap their wings (or fins) at a frequency given by a simple formula, three scientists at Roskilde University in Denmark have found. The formula relates the flapping frequency at which a winged entity bats its wings to hover in the air (or stay submerged in the water) to the entity's mass and the size of the wings.

The researchers also found the formula holds for a large variety of life-forms, including insects, birds, bats, penguins, whales, and one robotic bird called an ornithopter — the dragonfly-like aeroplanes in the new Dune films.

What is the formula?

The formula is straightforward: f m/A. f here is the flapping frequency, m the mass of the airborne animal, and A the area of the wings (stands for 'is proportional to').

When the researchers calculated m/A number of various animals, birds, and insects and plotted it on the x-axis and their respective frequencies on the y-axis, they found a nearly straight line (see below). The black line is the relationship their model based on the formula predicted — an almost perfect fit.

PIGEON PROXIMITY

A new study looked at the social influences on pigeon flight routes. Researchers have found that flight paths are improved as younger birds learn the route from older birds, leading to overall more efficient routes over generations. The researchers compared the pigeon flight data to a computer model that prioritised four main factors representing what might be involved in choosing a flight path with minimal cognition, including: direction to the goal, representing the bird's internal compass; proximity to the other pigeon; the remembered route; and general consistency, since the birds are unlikely to make erratic turns. The younger agent benefits from the older agent by learning the route. However, it also shows that the older agent benefits from the younger agent. Since younger agents are not following an internal route, they are more oriented to the final destination. The agents' desire for social proximity between the two balances these draws, leading to an overall more efficient route.

CROWS

After decades of trying to control its population of crows, the Kenyan government plans to poison 1 million house crows by December 31.

— The proliferation of the Indian house crow (Corvus splendens) has severely impacted local ecosystems and communities in East African countries, including Kenya.

— A species that's native to India, house crows often attack indigenous birds, kill them and feed on their eggs. Crows usually work as a team — for instance, if one attacks a bird and chases it away from its nest, the other swoops in to steal the eggs. Experts say this aggressive behaviour of the crows has forced several native birds to leave their natural habitat. In Kenya, birds such as scaly babblers, pied crows, sunbirds, weaver birds, and waxbills have been displaced by house crows.

— It is not just native birds; crows are known to torment and kill newborn or sick calves and goats and eat a range of small reptiles, amphibians, mammals, and insects.

— Local communities have suffered too — crows damage fruit trees such as mango and guava, and raid crops, including wheat, maize, millet, rice, and sunflowers, leading to losses for local farmers.

— There are multiple accounts of how a species that's native to India and the subcontinent, besides other parts of Asia and the Middle East, began to be spotted in East Africa sometime in the 1890s.

— Regardless of how these crows reached East Africa, their arrival brought a new set of problems. Within a few years, their population skyrocketed, and by 1917, Zanzibar had declared them pests and put a bounty on their heads

For Your Information:

— This is not the first time that an attempt will be made to eliminate house crows in Kenya. "From the 1980s till 2005, there was a low-level control happening in the country by poisoning the house crows," said Dr Colin Jackson of A Rocha Kenya. Poisoning seems to be the most effective way to eliminate the house crows. Shooting or trapping them does not work as these birds are intelligent enough to avoid areas where they witness other crows dying or being trapped.

WHY CHILIS BURN. AND WHY HUMANS STILL LOVE THEM

Food safety authorities in Denmark have recalled three types of South Korean spicy instant noodles over possible risks of "acute poisoning". According to the Danish Veterinary and Food Administration, "the capsaicin content [in the noodles] is so high that it can pose a health hazard", especially to children. Capsaicin is the chemical which makes chili peppers spicy.

Fiery mind trick

Capsaicin is most abundantly found in the "placenta" (white membrane to which seeds are attached) of some chili peppers — fruits of plants of genus Capsicum, which were introduced to the rest of the world from South and Central America by Christopher Columbus.

The chemical binds to TRPV1 receptors in humans' nose, mouth, skin, and insides. These receptors help in detecting heat (and pain), and are most commonly activated by a rise in temperature. But capsaicin 'tricks' them into reacting, even though there is no actual temperature rise. The brain, thus, believes that the body is on fire, causing the painful, burning sensation associated with consuming chilis.

The body then tries to cool down — hence the sweating, and the red face (capillaries just below the skin dilate, as blood rushes to the surface of the body, where it can radiate heat away more easily). The runny nose or teary eyes (if capsaicin happens to come in contact) are the body's attempt at expelling the heat-causing element. So are the gut cramps and diarrhoea.

Evolutionary benefits

In 2001, biologists Josh Tewksbury and Gary Nabhan conducted a feeding experiment on some birds and rodents. They found that while the former tended to avoid chilis, the latter ate them like candy. The researchers attributed this to the fact that birds do not have TRPV1 receptors, unlike rodents (and mammals).

Tewksbury further found that unlike rodents, birds acted as seed dispersers. The seeds they consume (and poop out) germinate at high rates, whereas rodents tend to crush seeds while chewing. Capsaicin, thus serves a specific evolutionary purpose for chili plants. Later research has also found that the chemical protects against certain fungi and insects.

But developing capsaicin comes at a cost. It consumes a significant amount of the plant's limited resources, especially nitrogen and water. This makes spicy chilis more prone to droughts

Loving the burn

Yale psychologist Paul Bloom once said, "Philosophers have often looked for the defining feature of humans — language, rationality, culture and so on. I'd stick with this: Man is the only animal that likes Tabasco sauce".

It is clear that chilis evolved so as to not be consumed by mammals, but (many) humans still love it. Today, the five domesticated chili species have been bred to more than 3,000 different cultivars (or cultivated varieties) which vary in terms of colour, taste, and pungency.

Some experts argue this love for spicy foods (not just chilis, but also other foods like peppercorn or wasabi) comes from the antimicrobial benefits they possess. "Countries with hotter climates used spices more frequently than countries with cooler climates," biologists Jennifer Billing and Paul W Sherman wrote in "Darwinian Gastronomy: Why We Use Spices" (published in the QRB in 1998).

This is because food spoils much faster in hotter environments. Native Americans, for instance, used (and continue to use) chilis not just to add a spicy kick to food but to preserve it. "People who enjoyed food with antibacterial spices probably were healthier... They lived longer and left more offspring." the researchers wrote.

Psychologists have a different view. In their pioneering research paper, Paul Rozin and Deborah Schiller argued that chili lovers "come to like the same burning sensation that deters animals and humans that dislike chili... eating chilis [like] riding on roller coasters... can be considered instances of thrill seeking or enjoyment of 'constrained risks'" ("The nature and acquisition of a preference for chili pepper by humans", published in Motivation and Emotion in 1980). Emphasis here on the word 'constrained' — the burn is 'simulated', much like a roller coaster drop, meaning that chilis do not actually pose a 'real' risk.

Word of caution

That being said, too much capsaicin can still be harmful. In high concentrations, the chemical can produce heartburn, gastrointestinal pain, and diarrhea. Moreover, long-term ingestion of high levels of capsaicin may lead to several chronic gastrointestinal disorders.

But 'poisoning', as flagged by Danish authorities, is rare simply because of the levels of capsaicin that need to be ingested before it becomes toxic. If humans are as sensitive to capsaicin as mice, a

person weighing 70 kg would have to consume roughly 2.5 litres of Tabasco sauce to overdose (Manirakiza, Covaci and Schepens in "Pungency Principles in Capsicum" in Capsicum: The Genus Capsicum, 2003).

But there is still more scope for research, and given capsaicin's gastrointestinal effects, high dosages are avoidable. Danish authorities acted after a social media trend, which saw children and teenagers daring each other to eat "a strong bowl of noodle soup", went viral. Such "challenges" are not new, and previously, have been known to be deadly. In September 2023, a Massachusetts teen with a congenital heart defect died after participating in a spicy tortilla chip challenge.

WHY CLOUDS GO GREY BEFORE THEY RAIN

A: Scattered water droplets in the clouds are the reason.

When the Sun shines over clouds, water droplets in the latter act like prisms, splitting white sunlight into its component colours. They send these rays of light of different colours (frequencies) flying in different directions at haphazard angles. These rays often manage to recombine because there are several droplets in clouds, all scattering sunlight and creating white light. This is why clouds are white.

But just before clouds are going to rain, the water droplets are swollen. They coalesce to form larger droplets, of a few millimetres or more each. These droplets absorb more light and transmit less to the base of the clouds. As a result, these clouds have a greyish appearance; only their base scatters white light (image) to observers on the ground. However, because enough sunlight illuminates the clouds' upper decks, they continue scattering white light to anyone viewing them from space or from aboard an aeroplane.

Such scattering phenomena manifest in other ways too. Dust scatters white light the same way clouds do for the same reason, in a process called Mie scattering. It takes place only when the size of the scattering particle is comparable to the wavelength of the light.

HOW DIAPERS USE QUANTUM PHYSICS TO ATTEND TO NATURE'S CALL

Still wondering what you should gift your friends who have just turned parents? Think no more and buy a bunch of diapers. This sleep-giving, time-relieving, and peace-conferring machinery has been providing the only solace young parents can often find between all the screaming and food-throwing their adorable babies are doing. Just wrap this soft, powdery white packet around the baby's buttocks, and from a few hours to even a whole night it will make sure the baby — and consequently you — will be able to get some more sleep.

But have you ever wondered how it is that a diaper is able to soak so much liquid? We all know a few things can soak water around us, such as our cotton clothes, and a few things that don't, such as our rubber shoes. What is in that diaper that it seems to be able to absorb so much more? This has some of the most beautiful pieces of physics we see around us. But before we do that, let's find out why some things soak water and some things don't.

The case of cotton

Whether something absorbs or repels water has to do with microscopic forces and the nature of a material. Water, the all prevailing, life sustaining liquid we are so used to, is a remarkable thing. Its smallest constituent is a molecule made of two hydrogen atoms and one oxygen atom.

While every atom here is charge neutral — i.e. it has an equal number of positively charged protons and negatively charged electrons — something funny happens. Two electrons, one each from every hydrogen atom, decide to shift a bit towards the larger oxygen atom (thanks to a pull exerted by the latter). Thus the oxygen atoms become more negatively charged and the hydrogen atoms become more positively charged.

Thus we can think of every molecule as a big-headed monkey with two hands.

The molecules of a diaper

When you place your cotton handkerchief on the water you accidentally spilled on the table, the water molecules meet the molecules of the cotton fibres.

These fibres are big networks of molecules called polymers, and they have a bunch of slightly positive and negatively charged ions sitting everywhere. So as soon as you place the cotton on the water, the water molecules see this big network like a bunch of hungry monkeys meeting a jungle of dense trees.

The water molecules now experience forces leading them to rush to the ions, climbing over various molecules of cotton. In the process the water is soaked up and your handkerchief becomes wet.

This also means that whether some material will soak or not soak water depends on the kind of ions it is made of. For example, synthetic rubber is again made of a type of network of molecules, but it deliberately has ions that repel water molecules.

So the water molecules are not inclined to enter them at all. Cotton absorbs water quite well and therefore it is no wonder you see it everywhere, including as cotton balls in the handy medical kit.

Cotton works great when you need to absorb small amounts of water, but when you need to absorb the litres of fluids your baby is producing overnight, clearly something more remarkable is required. That magic material is called a super-absorbent polymer (SAP).

If you wish to see this material, grab hold of a pair of scissors and cut open an unused diaper or sanitary pad. Beneath all the cotton tissue and fragrances, you will come across a whitish power. This is SAP.

The molecular structure of this compound again resembles the complicated mesh of a tree. As soon as it comes in contact with water, water molecules flow through and sit inside. The oxygen atoms in particular are attracted to the mesh due to the presence of an important ion in SAP called sodium — the same sodium that is in your salt and often goes off the charts if you don't hydrate yourself properly in the summer.

Sodium-water bond

Sodium and water have some unspeakable love for each other that they remain stuck together when given a chance. This is the same reason salt — in the form of a compound of sodium and chlorine — dissolves in water. Here, sodium ions leave the chlorine ions for water molecules, and in the process the salt dissolves.

Anyway, because of the oxygen, the water molecules go and attach themselves to the sodium ions in the SAP trees. Their monkey hands are however still free. They start to hold each other and

form a strong network that can no longer move, i.e. it is rigid. The whole network swells, trapping the water molecules within, to form what is called a gel.

Thus, SAP is a magical compound that can absorb a large amount of water, at times more than its own weight.

Quantum physics in the fray

You may still wonder why it is that sodium ions have this fascination with water. What kind of other ions can we use that would change this physics? What if, instead of water, there was some other liquid that has to be soaked up?

The reason why sodium and oxygen atoms want to come closer is that they wish to share an electron.

As a child, we are made to think of an electron as a small table-tennis ball zipping around a much larger nucleus, like a basketball. Like everything else in this world, this is not the complete picture. The electron is really a wave, and it can be shared by two atoms at the same time thanks to the rules of quantum physics. In fact, nature prefers this arrangement: to have the electron to live in the shared world of oxygen + sodium. And this is what drives water molecules towards the sodium ions in a diaper.

NEW FABRIC FOUND TO MAKE URBAN 'HEAT ISLANDS' MORE BEARABLE

As global temperatures and urban populations rise, the world's cities have become "urban heat islands," with tight-packed conditions and thermal radiation emitting from pavement and skyscrapers trapping and magnifying these temperatures. With 68% of all people predicted to live in cities by 2050, this is a growing, deadly problem.

In a paper published in Science, researchers from the University of Chicago detail a new wearable fabric that can help urban residents survive the worst impacts of massive heat caused by global climate change, with applications in clothing, building and car design, and food storage.

Test results

In tests under the Arizona sun, the material kept 2.3 degrees Celsius cooler than the broadband emitter fabric used for outdoor endurance sports and 8.9 degrees Celsius cooler than the commercialised silk commonly used for shirts, dresses and other summer clothing. This, the team hopes, will help many avoid the heat-related hospitalisations and deaths seen in global population centres this year alone.

Existing cooling fabric for outdoor sports works by reflecting the sun's light in a diffuse pattern so it does not blind onlookers. But in an urban heat island, the sun is only one source of heat. While the sun bakes from above, thermal radiation emitted from buildings and pavement blast city-dwellers with blistering heat from the sides and below. About 97% of the clothes are being heated by the thermal radiation coming at them from the sides and below, which broadband emitter fabric does not fight. This means many materials that perform well in lab tests will not help city-dwellers in Arizona, Southeast Asia and China when massive heat waves hit them.

The University of Chicago team's new textile, which has received a provisional patent, can help provide a passive cooling system that can supplement and reduce the need for energy- and cost-intensive systems.

The applications go far beyond clothing. A thicker version of the fabric protected by an invisible layer of polyethylene could be used on the sides of buildings or cars, lowering internal temperatures and reducing the cost and carbon impact of air conditioning. Similarly, the material could be used to transport and store milk and other foods that would otherwise spoil in the heat, cutting refrigeration's impact.

STATE OF GLOBAL AIR REPORT (SOGA)

- The report, released by the Health Effects Institute (HEI), an independent U.S.-based nonprofit research organization, found air pollution accounted for 8.1 million deaths globally in 2021.

- China and India account for 55 percent of the global burden at 2.3 and 2.1 million deaths respectively.

- Produced for the first time in partnership with UNICEF, the report finds that children under five years old are especially vulnerable, with health effects including premature birth, low birth weight, asthma and lung diseases.

- In 2021, exposure to air pollution was linked to more than 700,000 deaths of children under five years old, making it the second-leading risk factor for death globally for this age group, after malnutrition.

- India reported the highest number of pollution-linked deaths in children under the age of five in 2021 with at least 169,400 deaths attributed to air pollution.

SICKLE CELL PATIENTS NEED URGENT ACCESS TO MODERN MEDICATION

India grapples with a formidable challenge posed by SCD, with millions affected. The high prevalence of this genetic disorder underscores the urgent need for targeted interventions, and robust healthcare infrastructure to mitigate its impact

Sickle Cell Disease (SCD) remains a formidable challenge in the landscape of global health, particularly in places like India, where its burden is significant, particularly among tribal populations.

What is SCD? Sickle cell disease, a chronic condition, encompasses a group of inherited disorders affecting haemoglobin, the protein responsible for oxygen transport in the body.

Typically, red blood cells possess a disc-like shape and are flexible, facilitating smooth movement through blood vessels. However, in SCD, a genetic mutation causes these red blood cells to adopt a crescent or "sickle" shape.

These sickle-shaped RBCs lead to disruption of blood flow in small vessels and result in numerous complications. As a haematologist deeply entrenched in the battle against SCD, I've witnessed both the strides made in treatment and the persistent hurdles hindering comprehensive care.

Understanding the burden

SCD affects 20 million people worldwide. India grapples with a formidable challenge posed by SCD, with millions affected.

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The high prevalence of this genetic disorder underscores the urgent need for targeted interventions and robust healthcare infrastructure to mitigate its impact. According to an article by Forbes, India has the second-highest global prevalence of the disease, with one in 86 births positive for SCD. Newborn screening programmes aimed at early detection of SCD have been instituted in many parts of the world.

This has led to the early institution of essential preventive care elements such as, key immunisations, penicillin prophylaxis, and consistent health screening for common complications, resulting in improved survival rates in paediatrics. It underscores the importance of universal newborn screening and early diagnosis.

Patients with SCD suffer a broad spectrum of complications that contributes to their increased morbidity and mortality. From end-organ damage and increased infection susceptibility, to stroke and pulmonary complications, the challenges presented by SCD are diverse. Since it was first described in 1910 as associated with "peculiar elongated and sickle shaped red corpuscles" to discovery of the molecular basis by Linus Pauling in the late 1940s, much was known about the pathophysiology of the disease. However, this did not translate to available treatments.

The geographic and socioeconomic disparities exacerbate the challenges faced by individuals living with SCD, necessitating tailored approaches to ensure equitable access to care.

Treatment and access

Recently though, the landscape of SCD treatment has witnessed remarkable advancements. After multiple decades where Hydroxyurea was the only disease modifying therapy for SCD, there are now multiple medications that are approved and available. After years of symptom management as the treatment strategy, we now can talk about a choice of disease-modifying therapies and disease control. Spearheaded by breakthroughs in gene therapy, we can now discuss transformative, curative therapies.

However, despite the strides made in treatment modalities, accessibility remains a formidable barrier impeding optimal care for individuals with SCD. Universal access to proven medications like hydroxyurea is crucial, emphasising the need for scalable solutions to ensure widespread availability. Collaborative efforts between healthcare stakeholders, government agencies, and pharmaceutical entities are imperative to streamline the distribution channels and bridge existing gaps in accessibility.

INDIA EYES BREAKTHROUGH AGAINST SICKLE CELL

India is getting closer to developing a gene therapy for sickle cell disease, a genetic blood disorder with a high prevalence rate among the Scheduled Tribes, officials of the Union Tribal Affairs Ministry said on Wednesday.

Vibhu Nayyar, Secretary, Tribal Affairs Ministry, said the government was expecting to hear "good news" by January 2025 on the laboratory tests that are being run. M. Srinivas, Director of the All India Institute of Medical Sciences (AIIMS), said researchers were working to develop a gene therapy using CRISPR-Cas9, a gene-editing tool.

"We want that in the next six months to one year, we will be able to go forward with using this method for treating sickle cell disease — making India one of the first countries to do so," Mr. Srinivas said.

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He was speaking at the National Conclave on Generating Awareness on Sickle Cell Disease, organised by the Tribal Affairs Ministry in collaboration with the Birsa Munda Centre at the AIIMS.

Union Tribal Affairs Minister Jual Oram, addressing the opening of the conclave, lauded the efforts but said it was important to involve and coordinate with ground-level healthcare workers such as ASHAs and anganwadi workers for these plans to be implemented properly.

This comes months after the U.S. Food and Drug Administration approved the CRISPR-Cas9 technology for a cell-based gene therapy to treat sickle cell disease in December 2023.

Making it cost-effective

Ministry officials said one of the main challenges for India was to find a way to make this therapy cost-effective. Developing a gene therapy using CRISPR has been part of India's mission to eradicate sickle cell disease by 2047.

A government dossier on the mission, which was launched by Prime Minister Narendra Modi in July 2023, said the technology had "the potential to be a single dose cure for blood disorders like sickle cell anaemia".

Part of this mission is to also conduct over seven crore screenings among vulnerable tribal populations across 17 States and Union Territories, of which three crore screenings have been achieved so far, Ministry officials said.

The CRISPR-Cas9 system consists of an enzyme that behaves like molecular scissors, which can be directed to cut a piece of DNA at a precise location. This will then allow a guide RNA to insert a changed genetic code at the sites of the incision.

Addressing the gathering of doctors, experts, and healthcare professionals, Mr. Oram said the Union government was committed to working on the sickle cell disease eradication mission and called for officials from across Ministries and departments to ensure that grassroots workers were roped in for the implementation process and that they should themselves engage with them.

Following the addresses by senior officials and the Minister, a series of technical panel discussions were also held on recognising and screening for sickle cell disease, managing the disease, and other issues.

GENE THERAPY OFFERS HOPE FOR PATIENTS WITH HEARING LOSS

Hearing loss is one of the most prevalent disorders and it is estimated that over one billion people suffer from hearing loss and approximately one-two children in every 1,000 births are born with congenital hearing loss.

Hearing loss is a complex condition that can result from a variety of environmental and genetic factors including ear infections. Often, hearing loss serves as symptoms indicating defects or pathologies in the ear's process that converts sound into electrical signals sent to the brain.

It is widely estimated that a significant majority, amounting to approximately 50-60% of congenital hearing loss cases, are attributed to genetic causes. Among the various populations, genetic variants play a significant role. For example, mutations in the GJB2 gene are the most common genetic cause of hearing loss in Caucasian, Asian and Hispanic populations. In Africa, the MYO15A and ATP6V1B1 genes are more frequently implicated.

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In total, over two dozen genes have been linked to genetic causes of hearing loss. Besides genomic mutations, mitochondrial genetic defects can also lead to hearing impairment. Genetic variants could also play a role in the complex interplay with other factors, like medications. For instance, a prevalent genetic defect in the mitochondrial MTRNR1 gene can predispose individuals to hearing loss when administered with the aminoglycoside antibiotics, widely used in treatment of TB.

Emerging therapies

Correction of the gene defect underlies the genetic cause of hearing loss, and therefore gene therapy and genome editing have been touted as one of the possible emerging therapies for hereditary or genetic causes of hearing disability. Gene therapy typically involves replacing or supplementing a dysfunctional gene with normal or functional genes. There are a number of molecular approaches that have been widely used for such replacement or supplementation.

Adeno-associated virus (AAV) is one of the most well-studied and widely used vectors for this purpose. AAV offers several advantages: it is a safe vector, as it does not cause human diseases, and it can infect both dividing and non-dividing cells, thus having a broad spectrum of cells it can target for genetic editing.

In a recent report published in Nature Medicine, Chinese researchers provide early promise towards using gene therapy for at least one genetic hearing loss. Researchers at the Fudan University, in collaboration with a number of research and clinical centres in China, proposed that gene therapy could effectively treat a form of genetic deafness involving the OTOF gene, known as hereditary deafness 9. Mutations in the OTOF gene account for approximately 2-8% of all genetic hearing loss cases. In this clinical trial, researchers employed Adeno-associated virus vectors with the intention of inserting a healthy OTOF gene into patients' ears using a harmless virus. All patients experienced improved hearing in both ears. Initially performed on one ear, the study was expanded to test bilateral (both ears) therapy in five paediatric patients.

The researchers in the report suggest that no severe side effects were observed, while among the recorded 36-odd minor side effects, the most common were increased lymphocyte counts and cholesterol levels apart from an increase in lactate dehydrogenase levels, which is a marker for tissue damage in the body. Hearing tests showed significant improvement in all patients reported and all patients regained the ability to understand speech and locate sound sources. The promising results indicate that AAV gene therapy is safe and effective for treating hereditary hearing disability.

Set of caveats

While the initial results are encouraging, Adeno-associated virus vectors come with their own set of caveats. The foremost being that our immune system can recognise and eliminate the virus making it less effective in individuals who are immunised, and also limits the re-administration of the gene therapy vector, since the primary administration would produce antibodies against the virus. Previous studies have suggested that approximately one-fifth to one-third of the patients have neutralising antibodies against AAV.

The present report is limited by the small number of patients studied and reported over a short follow-up period. However, it is encouraging that the clinical trial is ongoing and longer-term follow-up data of the patients would be available soon. While the results are encouraging and provide immense hope, we are not yet on a firm ground to assert that gene therapy for hearing loss is paving the way towards a sound future.

GENE EDITING PROLONGS LIFE OF PIG KIDNEY TRANSPLANTS

A new study shows how gene editing and immune suppression strategies can prolong the survivability of pig kidney transplants. The findings indicate that genetically modifying donor pigs could extend transplant lifespans and improve clinical outcomes. Kidneys from pigs that had three genes knocked out and expressed seven human transgenes were transplanted into three macaques, which didn't show antibody-mediated rejection of the organs, and the transplanted kidneys survived until immunosuppression was withdrawn.

DOES H5N1 POSE A THREAT FOR HUMANS?

The highly pathogenic avian influenza (HPAI) H5N1 strain has been affecting cattle across several States in the U.S., and for the first time, three cases of human infection in dairy farm workers were also reported, raising fears of the risks of a wider transmission of this virus from cattle to humans. The districts of Alappuzha, Kottayam and Pathanamthitta in Kerala, where water bodies, migratory birds, fowls and integrated farms form part of the ecosystem, have reported H5N1 outbreaks in 19 places since April. However, the death of crows in large numbers in Alappuzha, and subsequent confirmation of the H5N1 virus in their carcasses have given rise to concerns that the virus could spread far and wide.

How dangerous is it?

Ever since it emerged in 1996, H5N1 has resulted in the mass killing of billions of wild birds as well as fowls. The virus's jump to some 26 mammalian species, especially cattle and the now emerging proof that it can infect humans, has heightened the threat perception that H5N1 could lead to the next global pandemic. Of particular concern are the facts that herd-to-herd transmission of H5N1 is now taking place in the U.S., involving some 12 States and that the virus has been detected in raw milk and in milking machines. According to scientists, the virus lacks changes that would make it better adapted to transmit between people and therefore, the risk to human health remains low. However, the potential for influenza viruses to rapidly evolve and the wide geographic spread of H5N1 signals that more human infections should be expected.

What is the level of risk to humans?

The virus seems to spread from birds/animals to humans who may be closely interacting with these, without adequate personal protection.

According to the WHO, between 2003 and April 1, 2024, close to 900 human infections of H5N1 have been reported from 23 countries, of which, more than half were fatal. Even though the risk of human infections from H5N1 is still perceived to be low, this can change rapidly as the virus spreads to more animals, especially cows or domestic mice, which have closer contact with humans. In districts like Alappuzha where water fowls, chicken, dairy cows and humans share the same environment, the opportunities for human infections should be perceived as high.

What are the symptoms of H5N1?

The common symptoms of H5N1 are similar to those of influenza-A illnesses, including respiratory difficulties, fever, cough, sore throat and pneumonia, all of which can potentially worsen, especially in those who are immunocompromised or have underlying conditions. In the U.S., conjunctivitis or pink eye was the only symptom that was reported in one of the farm workers who was infected.

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

Telegram: http://t.me/DreamIAS_Jamshedpur

In April itself, the Centre for Disease Control and Prevention (CDC) had sent out a health advisory that clinicians should consider the possibility of H5N1 infection in persons who report with respiratory illness or conjunctivitis, if they have had exposure to livestock or dead birds. Early detection and containment of the infection is important to prevent the extensive spread of the virus.

As of now, in Kerala, as only the poultry has been found affected in all outbreaks, the strategy adopted for containment is the mass culling of birds within a certain radius of the reported infection. However, the incident of the mass death of crows has now changed the equation, as it is possible that the infection may have been taken by the crows beyond the current surveillance zone. Continuous surveillance by testing environmental samples — water, faecal matter of birds — as well as Influenza-like illness human samples would be necessary in designated surveillance zones. People who have livestock and birds at home are being advised to wear masks, and the antiviral Tamiflu is being prescribed as prophylaxis to people wherever H5N1 positive cases are found.

What are the necessary precautions?

People should avoid unprotected exposure to infected birds or animals or their contaminated environments. If at all one has been exposed to a possible H5N1-contaminated environment, they should monitor themselves for new respiratory illness symptoms, including conjunctivitis for 10 days and seek proper medical advice. It would be better to ensure that people use only pasteurised milk and poultry meat and eggs should be well-cooked to prevent any possible food-borne transmission of H5N1.

The concept of 'One Health', although often acknowledged, is rarely prioritised and operationalised. Kerala, however, has taken 'One Health' beyond the conceptual framework and the project is currently being implemented as part of the World Bank-aided 'Rebuild Kerala' project in four districts — Alappuzha, Pathanamthitta, Kottayam, and Idukki. It has established a community-based disease surveillance network, with 2.5 lakh volunteers trained in the 'One Health' concept in these districts, who will report any unusual events or death of animals/birds in a locality so that early warning and early preventive or control measures can be taken.

DISEASES WITH HIGHER BURDEN IN ASIA AND AFRICA LACK RESEARCH FUNDING

Close to 677 million people in India required treatment against tropical diseases such as dengue, chikungunya, and snakebite envenoming in 2021, yet global research about these ailments continues to be heavily underfunded compared to illnesses such as HIV/AIDS. These diseases are termed as Neglected Tropical Diseases (NTDs) by the World Health Organization (WHO).

NTDs primarily affect populations in tropical and subtropical regions, and they have historically received less attention and fewer resources. The affected populations are typically among the poorest in the world. These diseases contribute to a cycle of poverty, as they cause long-term disability, social stigma, and economic burden, which in turn hinders economic development and attracts less commercial investment in treatments and research. They also lead to other health problems such as anaemia, blindness, chronic pain, infertility and disfigurement.

Research and development for NTDs have been historically underfunded compared to diseases like HIV/AIDS, tuberculosis, and malaria 1. It shows the annual research and development funding for NTDs in 2022 ($, adjusted for inflation). The COVID-19 pandemic received a total research

funding of \$4.22 billion in 2022. HIV/AIDS, tuberculosis and malaria received funding in the range of \$600 million to \$1.35 billion that year. Whereas, diseases such as dengue, chikungunya, leprosy and snakebite envenoming received funding in the range of \$10 million to \$80 million.

With 677 million people requiring treatments, India tops the charts followed by Nigeria with 139 million, Indonesia with 79 million, Ethiopia with 71 million and Bangladesh with 56 million. Congo, Philippines, Tanzania, Uganda and Pakistan are the other nations in the top ten list. The geographic spread clearly shows that most of the disease burden in the case of NTDs is shouldered by countries in Asia and Africa. Mexico is the only non-Asian, non-African country with a higher share of burden featuring high (14th) on the list. Deaths due to NTDs in Europe, Oceania and North America (except Mexico) are few and far between.

India tops the charts in terms of dengue deaths with 17,500 such fatalities recorded in 2019. India also tops the charts in leprosy cases with over one lakh cases in 2022. With over 50,000 deaths due to venomous snakes in 2019, the mortality in India is much higher than the distant second — Pakistan (2,000 fatalities).

The technologies on which the global research and development funding for infectious diseases was spent. Most of the global research funding was focussed on finding vaccines to counter COVID-19. A sharp increase in vaccine funding to the tune of \$5.2 billion was recorded in 2020. In 2022, research funding dropped across all technologies including vaccines. Research money for new drugs, basic research, biologicals and diagnostic platforms declined in 2022.

A lot can be done to alleviate the health burden caused by NTDs. Many can be managed with inexpensive existing interventions or new technologies developed through research. However, these diseases still suffer from a lack of adequate funding, research and development, and global attention. The success of certain initiatives demonstrates what can be achieved with deliberate effort. Examples include the near-eradication of Guinea worm disease and the elimination of river blindness, lymphatic filariasis, and trachoma in many countries.

ANTIMALARIALS MAY RELIEVE POLYCYSTIC OVARY SYNDROME

Plant-derived compounds best known for their antimalarial properties relieve polycystic ovary syndrome, a major public health problem that affects millions of women worldwide. These compounds, called artemisinins, achieve their effect by suppressing ovarian androgen production in multiple rodent models as well as in a small cohort of human patients. Nineteen women taking dihydroartemisinin, a drug used to treat malaria, for 12 weeks substantially reduced key PCOS biomarkers.

HOW MUCH WATER DO YOU NEED TO DRINK TO CONTROL BLOOD SUGAR?

When we talk about treating and managing diabetes, we discuss many important things like diet, exercise, sleep, medicines and follow-ups with doctors. But we neglect mentioning the need to drink water and maintain fluid balance. Even mild dehydration can cause significant increases in blood sugar, damaging the body over time.

In fact, water consumption may not be enough for people with diabetes. They should have fluids containing electrolytes as well as an optimal concentration of glucose to facilitate absorption.

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Why is dehydration risky for those with diabetes ?

Once the system is dehydrated, the circulating blood glucose becomes more concentrated, resulting in a sugar spike. The kidneys then work overtime to produce more urine to filter the blood. Uncontrolled diabetes results in excessive urination, thirst and worsens dehydration. This can predispose one to diabetic ketosis, a condition when the body doesn't produce enough insulin to allow blood sugar into your cells for use as energy.

The liver then breaks down fat for fuel, which causes a buildup of acids that can even lead to coma. In fact, one of the first treatments given to a patient of diabetic ketoacidosis and coma is to rapidly infuse fluids into their body. The insulin is administered only after they have been rehydrated.

There is an antidiuretic hormone called arginine vasopressin, or AVP, which plays a key role in maintaining the fluid and electrolyte (salt balance) in the body. Reduced water intake impacts its functioning. Another mechanism by which the body prevents dehydration and keeps salt and water balance through the kidneys is by controlling the volume and composition of the urine. If the kidney is unable to regulate the balance of water and salts, this can lead to fluid and electrolyte abnormalities.

What are symptoms of dehydration among people with diabetes?

The most common symptoms are excessive thirst and dry mouth. In more severe cases, the skin loses elasticity. Accompanying symptoms include headache, dry eyes, dry skin, dark yellow urine, dizziness, general weakness and exhaustion. Sometimes the symptoms of dehydration do not become obvious until the body goes into crisis mode. The pulse then becomes rapid and thready and it can lead to confusion and lethargy.

Can some diabetes drugs result in dehydration?

Recently, the use of drugs like SGLT2 inhibitors lead to excretion of glucose through the urine. That's why people on such drugs need to increase their water intake by at least half to one litre per day to remain hydrated. Metformin reduces appetite, which in turn decreases water intake and water absorption from solid foods.

Normally a person with diabetes should consume at least 2 ½ litres of water per day and if on SGLT2 drugs, even up to 3 litres per day. There are however some precautions and contraindications. For example, if a person with diabetes has heart or kidney failure, they may be advised by their doctor to cut down on both water and salt intake.

What are some simple dos and don'ts?

• One should monitor one's blood glucose level regularly and match readings with fluid intake.

• People with diabetes should not exercise outdoors in the peak of summer.

• Restrict consumption of alcohol, caffeine and sugar sweetened beverages.

• Instead of drinking fruit juices or sweetened drinks, it is always better to drink zero-calorie water. So always carry a bottle.