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DreamIAS



INTERNATIONAL

PERSISTING BRUTALITY

Russia's missile strikes across Ukraine on Monday, claiming at least 38 lives, are yet another reminder of the brutality of the ongoing invasion which began on February 24, 2022. Among the civilian locations hit was the Okhmatdyt Children's Hospital in Kyiv, where at least two people were killed, according to Ukrainian authorities. Russia says it targeted military and industrial bases and blamed Ukraine's missile defence for the damage to the civilian centres, but such claims cannot be trusted as Russia's sustained bombing campaigns in Ukraine have targeted military and civilian locations. Monday's attack came on the eve of a North Atlantic Treaty Organisation (NATO) summit in Washington, where member-countries are expected to take decisions on long-term commitment for Ukraine, including a €40 billion annual military aid. Ukraine's President Volodymyr Zelenskyy was in Warsaw on Monday where he signed a new security pact with Poland, which empowers the NATO member-country to shoot down Russian missiles and drones in the Ukrainian airspace. Russia's attack could be the Kremlin's way of messaging NATO and Poland, but the strikes on civilian centres only expose the callousness of Russia's war leaders.

Russia has made incremental territorial gains in recent months. Its troops have advanced in the Kharkiv Oblast, taking several villages. Last week, Ukrainian forces were forced to withdraw from a neighbourhood of Chasiv Yar, a strategic hilltop town in Donetsk. But the absence of dramatic gains, even in the face of Ukraine's weakness, has raised questions about Russia's capabilities. Ukraine may be struggling to hold the frontline but it has taken the drone war to the Black Sea and Russia's mainland. It has incapacitated Russian ships, repeatedly targeted Russia's energy depots using drones and struck Russia's border regions causing civilian and military casualties. Two and a half years after the war began, no side is seen capable of finding a military solution. For Ukraine, pushing Russian troops out of the territories they have captured looks practically impossible. Russia should also realise that its aggression has rejuvenated NATO, its sworn enemy, that has expanded since the war began and promised Kyiv long-term assistance. A practical path ahead is to bring both sides to the table. China's President Xi Jinping said on Monday that world powers should help them hold talks. Prime Minister Narendra Modi, in Moscow, also expressed India's support for dialogue. Russia's partners should convince Russian President Vladimir Putin of the need to stop these mindless attacks on Ukraine and be ready for serious dialogue. Ukraine's allies should also put pressure on Kyiv to be more open minded about bringing the war to an end through talks.

BEHIND RUSSIA'S 'HIGH INCOME' RATING FROM WORLD BANK: WHY WESTERN SANCTIONS HAVEN'T WORKED

Earlier this month, the World Bank upgraded Russia from an "upper-middle income" country to a "high-income" one, a status it last had in 2014. The ranking was boosted by growth in trade (+6.8%), the financial sector (+8.7%), and construction (+6.6%), which led to increases in both the real (3.6%) and nominal (10.9%) GDP. The improvement, however, is on account of the war economy, and is unlikely to endure, according to most experts.

— The World Bank classifies economies into four groups based on per-capita gross national income (GNI) in US dollars: low, lower-middle, upper-middle, and high. The Bank's 2024-25 classification for high-income countries raised the threshold to \$14,005 or more.



- In nominal terms, Russia ranks 72nd globally in per-capita GNI and 53rd in purchasing power parity.
- Ukraine, which has been fighting Russia’s invasion since February 2022, too has got an upgrade. Ukraine improved its status from a lower-middle-income country to an upper-middle-income one after economic growth resumed in 2023, the Bank said.
- Algeria, Iran, and Mongolia too, have moved up from the lower-middle income to the upper-middle income category.
- The resilience of Russia, which is now under more individual sanctions than Iran, Cuba, and North Korea combined, has come as a surprise... “Restrictions on trade and financing from the G7 countries and EU resulted in trade diversion to China, India, Türkiye, Central Asia and the South Caucasus, and investment in new infrastructure and logistics,” the Bank noted.
- Why curbs haven’t worked: OIL: The sanctions on Russia’s energy sector are not as tight as the ones that were imposed on Venezuela or Iran.
- INVESTMENTS: Corporate investment has recovered since 2022, adding an estimated 4.5 percentage points to the growth in GDP in 2023. Investment is flowing to Russia’s defence and manufacturing sectors.
- CONSUMPTION: Private consumption has recovered strongly, adding 2.9 percentage points to GDP growth. This is being driven by buoyant credit and a strong labour market, with record low unemployment of just 3%, and a general rise in wages.
- Also, some sanctions had been imposed in 2014 after Russia annexed Crimea, and those had already been factored in the cost.

For Your Information:

- Since the beginning of the war in Ukraine, India has been buying large amounts of Russian oil at a discount to cushion the inflationary impact of rising crude prices.
- The purchase of Russian crude has pushed bilateral trade volumes beyond expectations and targets. Before the war, the bilateral trade target was set at \$30 billion by 2025. However, bilateral trade reached an all-time high of \$65.70 billion in FY 2023-24, according to data from the Department of Commerce.

CHINA IS A ‘DECISIVE ENABLER’ OF RUSSIA’S WAR, SAYS NATO

NATO leaders on Thursday looked to bolster ties with Asian partners after slamming China as a “decisive enabler” of Russia’s war, before holding talks with Ukraine’s President Volodymyr Zelenskyy at the end of a summit in Washington. The 32-nation alliance has used the pomp-filled set piece in the U.S. capital to showcase its resolve against Moscow and backing for Kyiv.

After spending the bulk of the summit focused on bolstering Ukraine, NATO shifted attention eastwards by welcoming the leaders of Australia, Japan, New Zealand and South Korea.

A declaration from NATO released on Wednesday called Beijing a “decisive enabler of Russia’s war against Ukraine” through its supplies of dual-use goods such as microchips that can help



Moscow's military. China "cannot enable the largest war in Europe in recent history without this negatively impacting its interests and reputation," it said.

Beijing hit back by warning NATO to "stop hyping up the so-called China threat and provoking confrontation and rivalry".

China presents itself as a neutral party in the conflict, but it has however offered a critical lifeline to Russia's isolated economy, with trade booming since the conflict began.

After the sit-down, Ukraine's Mr. Zelenskyy will take centre stage at the giant convention centre in the heart of the U.S. capital.

The U.S. announced it would begin "episodic deployments" of long-range missiles to Germany in 2026. The White House said it would eventually look to permanently station them in Germany, and the missiles would "have significantly longer range" than current U.S. systems in Europe.

'Bringing chaos to Asia'

China accused NATO of seeking security at the expense of others and told the alliance not to bring the same "chaos" to Asia.

"NATO hyping up China's responsibility on the Ukraine issue is unreasonable and has sinister motives," Foreign Ministry spokesperson Lin Jian said. He said China has a fair and objective stance on the Ukraine issue.

DEATH BEFORE CAPTURE: WHAT IS THE ISRAELI MILITARY'S HANNIBAL DIRECTIVE?

As Hamas raided southern Israel on October 7 last year, the Israel Defence Forces (IDF) activated the "Hannibal Directive", a purported operational doctrine of using maximum force to ensure no soldiers are captured, even if it means sacrificing military and civilian lives, a media investigation has found.

The Hannibal Directive, also known as Hannibal Procedure and Hannibal Protocol, was used from the first hours of the attack in at least three military facilities that Hamas infiltrated, the Israeli newspaper Ha'aretz reported on Sunday (July 7).

About 1,200 people were killed and 250 were carried away to Gaza by the fighters, which provoked a ferocious Israeli assault on the Palestinian enclave in which more than 186,000 may have been killed over the last nine months, according to an estimate published in The Lancet. The IDF has not confirmed or denied the claims in the report, and has said that the results of internal investigations would be presented once complete.

So, what is the so-called Hannibal Directive?

The expression refers to a purported IDF operational policy that aims to pre-empt politically painful prisoner swaps by immediately eliminating everyone in the vicinity of a captive Israeli soldier, even if it poses a risk to the soldier himself.

And why is it called Hannibal Directive?

Israeli officials have maintained that the name was chosen at random. But it is believed that the policy was named after the Carthaginian general Hannibal, who apparently chose to kill himself when faced with the possibility of capture by the Romans in c. 181 BCE.



Hannibal, who commanded the forces of Carthage, a great city in what is now Tunisia, in the 17-year Second Punic War with the Roman Empire, had taken refuge with Prusias I of Bithynia in north-west Anatolia. The Romans forced Prusias to give him up, but Hannibal was determined not to be captured. According to accounts left by the Roman writer Cornelius Nepos and the historian Titus Livius, upon discovering that he had been surrounded, Hannibal consumed poison.

When was the purported doctrine embraced by Israel?

The Hannibal Doctrine was formulated as a response to the Jibril Agreement of 1985 in which 1,150 Palestinian prisoners were exchanged for three Israelis who had been seized in Lebanon by the Syria-based militant group Popular Front for the Liberation of Palestine-General Command (PFLP-GC).

The deal, which was negotiated over almost a year, was nicknamed after the leader of the PFLP-GC, Ahmed Jibril. Among the Palestinians released by Israel was Sheikh Ahmed Yassin, who went on to found Hamas in 1987.

The swap negotiations were exhausting, and the deal was seen as costly by many Israelis, who did not want to see a repeat. In mid-1986, after Hezbollah attempted to abduct two Israeli soldiers to southern Lebanon, Yossi Peled, then head of the IDF's Northern Command, drafted the operational order that would become the basis of the Hannibal Doctrine.

Peled essentially advocated the suspension of safety procedures that protect IDF soldiers from being fired on by their own in the possibility of capture, as opposed to actively targeting them. In its original form, the Hannibal Doctrine endorsed the use of light arms fire to stop the abductors or their vehicles, in order to prevent them from escaping. Over the years, this meaning has been interpreted loosely by the IDF, which has even employed attack helicopters in its pursuance of the doctrine.

WINDS OF CHANGE

The victory of Masoud Pezeshkian, a reformist who opposes moral policing of women and calls for engagement rather than confrontation with the West, in Iran's presidential run-off, shows that the Islamic Republic, plagued by economic woes and social tensions, is still capable of springing a surprise. Until a few months ago, Iran's executive, legislature and judiciary were controlled by the so-called 'principalists' (conservatives), who were opposed to reforms. The last few years also saw protests and state repression. The revolution seemed to be ageing. Yet, the Islamic Republic has elected a candidate who calls for change, in a poll that was necessitated by the death of Ebrahim Raisi, a conservative, in a helicopter crash in May. Mr. Pezeshkian, whose only administrative experience was a cabinet berth in the Khatami government over two decades ago, was a relatively obscure figure until last month. When his candidacy was cleared by the Guardian Council, Iran's reformist coalition, which had been weakened after back-to-back electoral setbacks, threw its weight behind him. Mr. Khatami, and Hassan Rouhani, moderate cleric and President from 2013-21, endorsed him. In the July 5 run-off, he won 53.6% votes to beat conservative rival Saeed Jalili.

In recent years, a growing number of Iran's voters have stayed away from elections as a protest against the system. In the first round of the presidential election, the 39.9% turnout fuelled debates about the legitimacy crisis of the semi-representative system. But the possibility of a reformist victory brought more voters in the run-off. The nearly 50% turnout helped Mr. Pezeshkian defeat Mr. Jalili despite a conservative consolidation behind him. This also means that



the voters have high hopes about Mr. Pezeshkian, who in the past has spoken out against the way protests were handled by security personnel. He also backs dialogue with the West to revive the 2015 nuclear deal, which was sabotaged by Washington in 2018. It is to be seen how far he can go in a system tightly controlled by the Shia clergy. Iran's President, the highest elected official, has limited powers in the country's theocracy which is commanded by the Supreme Leader. But with his strong mandate, Mr. Pezeshkian should not shy away from pushing for change. The clerical establishment should see his victory as a message from the public. This is an opportunity to promote gradual reforms at home and careful engagement with the world. If Mr. Pezeshkian and the clergy reach common ground, Iran has a chance to ride out the storms engulfing it.

RESURGENT LEFT

France's New Popular Front, a coalition of left parties comprising socialists, communists, ecologists and the hard-left France Unbowed, has surprised poll watchers to emerge as the single largest bloc in the snap election called by President Emmanuel Macron last month, following the European parliamentary elections. The NFP garnered 182 seats, putting it in pole position ahead of Mr. Macron's centrist alliance and its 168 seats. In third place — much to the surprise of their supporters, who hoped to reprise their winning performance in the European parliamentary election — came Marine Le Pen's far-right National Rally and allies, although their 143 seats still positioned them far ahead of their 89 seats in 2022. Despite the reasons for celebration that the left and the right might claim in the result, it is Mr. Macron's prospects for political and economic progress in France along a centrist path that has truly taken a beating from voters this time. Given that no single party has reached the minimum requirement of 289 seats for an absolute majority, France now stares at the gloomy prospect of continuing political uncertainty, the very scenario that Mr. Macron sought to avoid when he called for polls three years ahead of schedule.

At the heart of the present conundrum in France is mainstream concern about the rise of the right across the spectrum of European politics. The National Rally, founded by Ms. Le Pen's father, Jean-Marie Le Pen, a Holocaust denier who also espoused extreme views on migration, was once considered an "unviable political option". Now led by its 28-year-old President, Jordan Bardella, the party is actively seeking to transform its public image, perhaps even if broader voter acceptability requires a softening of its stance on questions of migration, minorities, religion and jobs. The broader regional paradigm, whose echoes reverberated through the election, is that the European political right is similarly finding a measure of acceptability in countries such as the Netherlands, Italy and Finland — and in these and other cases, the business of labelling them "far-right" has become relatively tricky as their policies tend to change frequently and vary significantly across the region. In France, the National Rally may have won over as many or more voters for consistently challenging Mr. Macron on the cost-of-living crisis in the country than for its view on immigration. In Italy, Prime Minister Giorgia Meloni recently scolded her party's youth wing for giving fascist salutes. Yet, anti-migration views have won strong support from voters who created unexpected election breakthroughs for Geert Wilders in the Netherlands, Nigel Farage of Reform UK in the United Kingdom and the AfD party in Germany. One thing is clear across Europe: the contest for political dominance, between the right, left and centre, could not be more intense.



NATION

OLD TRADITIONS, NEW TIES

Prime Minister Narendra Modi's visit to Moscow on Monday reaffirms an old tradition of holding annual summits between India and Russia leaders. With Russia his first choice for a bilateral visit in his third tenure, he also breaks a tradition that Indian Prime Ministers travel to neighbouring countries on their first stand-alone visits in a tenure, indicating the importance of the India-Russia partnership. The 22nd India-Russia Annual Summit has another first — the first Modi-Putin meet since the Ukraine war. The 21st summit was in Delhi in December 2021, just before Russian President Vladimir Putin launched “special operations” on Ukraine. Since then, the two leaders have met just once, at the SCO summit in Uzbekistan, where Mr. Modi had stated that this was not the “era of war”. Russia's growing dependence on China as a result of the war is also a concern for India, given tensions over the LAC. While there will be a scheduled framework of talks on bilateral issues (trade and energy relationships, space cooperation for Gaganyaan, and declining but substantial defence supplies), there will also be an opportunity to take stock of the war in Ukraine. Apart from its impact and western sanctions on global security, and shortages of food, fuel and fertilizers, India has been worried about its fallout on defence deliveries and spares from Russia. While an attempt to “Make in India” has made headway (Russian assault rifles and the India-Russia BrahMos missile), concerns over the reliability of supplies and the payments issue will need discussion. New Delhi's concern over Indian recruitments by the Russian army is another issue, officials indicate.

Above all, Mr. Modi's visit sends a geopolitical message given the contrast to another summit in Washington. On Tuesday, U.S. President Joseph Biden will welcome leaders of NATO countries for the transatlantic grouping's 75th anniversary. With Ukrainian President Volodymyr Zelenskyy and Indo-Pacific leaders who are part of the western sanctions present, it will be a show of strength supposed to demonstrate Russia's “isolation”. Mr. Modi has attempted a balance with his presence at the G-7 summit outreach in Italy last month and meeting Mr. Zelenskyy, and later sending an official delegation to the Peace Conference in Switzerland. The government has also shown its enduring commitment to traditional ties with Russia that stem from the 1971 Soviet Union Peace and Friendship treaty, by refusing to condemn the war at the UN and other multilateral forums, while continuing to engage with Russia bilaterally and at groupings such as the SCO, BRICS and the G-20. All eyes during Mr. Modi's visit will then be on how he uses India's particular multi-polar, unaligned perch to further the cause of “dialogue and diplomacy” and help hasten an end to the conflict that has divided the world.

HOW PM MODI'S VISIT TO AUSTRIA SENDS A MESSAGE BOTH TO MOSCOW AND THE WEST

Narendra Modi's visit to Vienna this week was the first by an Indian Prime Minister to Austria since June 1983, when Indira Gandhi travelled to the country. The Prime Minister's decision to travel to Vienna immediately after he met President Vladimir Putin in Moscow was significant — Austria is a European country that is not a part of NATO, the US-led anti-Russia trans-Atlantic military alliance, whose 32 leaders gathered in Washington DC this week.

— Vienna was under Nazi occupation during World War II. After the end of the war, it was divided into four sectors by the US, the UK, France, and the Soviet Union, supervised by the Allied Commission. The Allies occupied Austria for a decade after the war ended.



- In 1955, the four occupying powers signed the Austrian State Treaty with the Austrian government to establish Austria as an independent state. The Soviet Union demanded that Austria... maintain neutrality on the model of Switzerland, with the four powers pledging to the integrity and inviolability of Austrian territory.
- The 1955 treaty, which was ratified by all countries, thus bound Austria to neutrality. The constitution of Austria prohibits entering into military alliances, and the establishment of foreign military bases on Austrian territory.
- In 1952-53, the Austrians approached Jawaharlal Nehru, who was respected by both Western nations and the Soviets, for help in securing a sovereign nation.
- India was among the few countries that supported Austria's appeal at the United Nations General Assembly in 1952 for an end to the Allied occupation and the restoration of its sovereignty.
- In June 1955, about a month after Austria had gained full independence through the conclusion of the State Treaty, Nehru paid a State Visit to the country, the first by a foreign leader.
- Diplomatic relations between India and Austria were established on November 10, 1949 — this year marks its 75th anniversary.
- Austria offers tremendous opportunities for bilateral collaboration in infrastructure, renewable energy, e-commerce, fintech, enterprise tech, consumer services, and media and entertainment.
- Both countries have taken balanced positions in the Russia-Ukraine war.

For Your Information:

- Concerning the war in Ukraine, both leaders supported any collective effort to facilitate a peaceful resolution consistent with international law and the UN Charter.
- The two leaders also reiterated their unequivocal condemnation of terrorism in all its forms and manifestations, including cross-border and cyber- terrorism and emphasised that no country should provide safe haven...
- The two leaders emphasised that India and the European Union have the largest and most vibrant free-market space in the world, and noted that deeper EU-India ties will be mutually beneficial as well as have a positive global impact. They reiterated their commitment to achieving comprehensive reforms of the United Nations, including its Security Council.

INDIA HOSTS BIMSTEC FOREIGN MINISTERS AMID RAGING MYANMAR CRISIS

The seven-member Bay of Bengal Initiative for Multi-Sectoral Technical and Economic Cooperation (BIMSTEC) should find solutions to the regional challenges within itself, External Affairs Minister S. Jaishankar said on Thursday, addressing the first BIMSTEC Foreign Ministers' retreat held here.

The meeting assumes significance as it is being held against the backdrop of major developments in Myanmar, where the military junta has been receiving battlefield setbacks against dozens of ethnic armed organisations.



This is the first time such an event was organised since the Charter of BIMSTEC came into effect on May 20, which marked a landmark development in the evolution of the organisation.

The developments in Myanmar pose a major issue before the BIMSTEC as instability there has put a question mark on a number of developmental and connectivity projects that were aimed at firming up ties among countries like Nepal, Bhutan, India, Bangladesh, Myanmar, and Thailand.

A day before the beginning of the meeting in Delhi, the military junta in Naypyidaw lost control of Naungcho, a major town along a trade highway to China in the northern Shan State, to the Ta'ang National Liberation Army.

Following his meeting with Myanmar Deputy Prime Minister and Foreign Minister U. Than Swe, Mr. Jaishankar said, "Our discussions focused on the connectivity projects, so crucial for the future of BIMSTEC. Also exchanged views on border stability and humanitarian assistance."

The External Affairs Ministry is yet to clarify if India will extend humanitarian assistance to the affected civilian population inside Myanmar. Till now, assistance has been limited to the displaced population and personnel of the Myanmar military who sought refuge in Mizoram.

The Foreign Ministers of Bangladesh (Hasan Mahmood), Thailand (Maris Sangiampongsa), Myanmar, and Bhutan (D.N. Dhunyel) participated. The Nepalese and Sri Lankan Foreign Ministers skipped the meeting.

WHAT IS ORDER OF SAINT ANDREW THE APOSTLE, CONFERRED UPON PM MODI?

Prime Minister Narendra Modi was on Tuesday awarded Russia's highest civilian honour, the Order of Saint Andrew the Apostle, during his visit to the country.

The award for the PM was announced in 2019, for "exceptional services in promoting special & privileged strategic partnership between Russia and India and friendly relations between the Russian and Indian peoples."

What is the award, and who gets it?

The award is given to prominent government and public figures, military leaders, and outstanding representatives of science, culture, art, and various sectors of the economy for exceptional services to Russia. It can also be awarded to heads of foreign states for outstanding services to the Russian Federation.

Its name comes from Saint Andrew, who is believed to be one of the apostles or 12 original followers of Jesus. After Christ's crucifixion, the apostles are said to have travelled great distances to spread his message. Saint Andrew travelled to Russia, Greece, and other places in Europe and Asia, and founded the Church of Constantinople, which later led to the establishment of the Russian Orthodox Church. More than 90 million people follow the Church in Russia, out of the country's population of around 140 million.

Saint Andrew is regarded as the patron saint of Russia and Scotland. The 'X' symbol on the flag of Scotland comes from the saint's symbol, called the 'Saltire'. It is believed that he was crucified on a cross of a similar shape.

Tsar Peter the Great (1672–1725) established the Order of Saint Andrew in 1698. The chain of the Order consists of 17 alternating links, and features a gilded image of the State Emblem of the



Russian Federation, a double-headed eagle. It also includes a badge, a star, and a light blue silk moire ribbon. For those recognised for distinction in combat, the badge and star are adorned with swords.

The order was abolished in 1918 following the Russian Revolution, which overthrew the Tsarist regime. It was re-established in 1998 by an Executive Order of the President of Russia.

Who has received the Order of Saint Andrew the Apostle earlier?

Past recipients largely include influential figures in Russia, such as military engineer and gun designer Mikhail Kalashnikov, author Sergey Mikhalkov, the last leader of the Soviet Union Mikhail Gorbachev, Russian Orthodox Church leader Patriarch Alexy II, and the current head of the Russian Orthodox Church Patriarch Krill.

Foreign leaders who have been honoured in the past include Chinese President Xi Jinping in 2017, and the former President of Kazakhstan, Nursultan Nazarbayev.

WHAT AN NSA DOES

“The appointment of a new Additional National Security Advisor (ANSA) along with a restructuring of reporting relationships both within the National Security Council Secretariat (NSCS) and between the National Security Advisor (NSA) and the Union ministries has not attracted the attention it deserves.”

— “While the NSA now presides over a much bigger organisation, with an ANSA and three deputy NSAs, his new role appears more advisory and less operational. The NSA would deal with advisory outfits such as the National Security Advisory Board and the Strategic Policy Group. While the Chief of Defence Staff (CDS) and the three service chiefs, the Union defence, home, foreign and other secretaries are also required to report to the NSA, each of them also reports to a minister in their daily functioning.”

— “It appears the ANSA would now be the gatekeeper in the communication chain between six mid-level unit heads (three Dy NSAs and three service officers) and the NSA. This also means an additional bureaucratic layer has been created between the PM and those monitoring national security on a daily basis.”

— “One can see that a quarter century after the creation of the office of NSA, the institution, its place within the national government and its responsibilities and remit, are still evolving.”

— “The absence of any clearly laid out criteria and qualifications for the post and, worse, clearly specified duties and chain of command, has left the question open as to who should be made NSA — a diplomat, a spook, a soldier or a scholar?”

— “Finally, given the recent and ongoing controversy about the activities of R&AW, brought into global focus by charges levelled by state agencies in Canada and the United States, as well as the controversy around the decision-making process with respect to the Agniveer initiative, the role and remit of the NSA have once again come into focus.”

— “The role and responsibility of the NSA and of the National Security Council have evolved with time and changing circumstance... The fact is that successive NSAs have been learning on the job in dealing with national security challenges ranging from the border problem with China to handling political challenges in border states, and these challenges have only grown with time.”



LAW MINISTRY WORKS ON AI FOR TRANSLATING LAWS INTO OFFICIAL LANGUAGES

In order to reduce its reliance on state governments to translate Central legislation into Indian languages, the Union Law Ministry is working on developing Artificial Intelligence (AI) to translate laws into the official languages, likely by December, The Indian Express has learnt.

— According to senior officials of the Ministry, a recent trial of AI to translate laws was only around 40% successful. The Ministry and the National Informatics Centre are feeding in words from the legal glossary in Hindi and other Indian languages into the AI to improve results, officials said.

— While there are 22 Indian languages in the Eighth Schedule of the Constitution, translations are likely to be in 14 languages, including Bengali, Tamil, Gujarati, Urdu, Punjabi and Marathi, as not all languages are used in courts, the official said.

— These efforts come at a time when the three new criminal laws have come into effect on July 1, while their official translations into Indian languages are yet to be notified.

For Your Information:

— The Supreme Court has also deployed AI to translate its judgments. The project, which started in 2019, had translated 31,184 judgments into 16 languages using “AI translation tools” as on December 2, 2023.

— Under Article 348 of the Constitution, all proceedings of the Supreme Court and High Courts and authoritative texts of Bills introduced and passed by Parliament or any state legislature have to be English, unless the Governor of state, with the prior consent of the President, authorises the use of Hindi or any other official language of the state.

PATANJALI TELLS SC IT INSTRUCTED STORES TO REMOVE 14 UNLICENSED ‘MEDICINES’

The company co-founded by self-styled yoga guru Baba Ramdev, who is facing contempt proceedings for endorsing misleading advertisements in violation of the orders of the top court, said requests were also made to social media intermediaries and e-commerce platforms to pull out advertisements on these products.

Patanjali said media outlets associated with it or those specially engaged by the company were asked to stop broadcasting advertisements about the 14 concoctions in any form.

However, a Bench of Justices Hima Kohli and Sandeep Mehta directed Patanjali to file an affidavit in two weeks, stating whether or not the social media intermediaries have withdrawn the advertisements on Patanjali’s request.

Meanwhile, the court clarified that its May 7 order, directing advertisers to submit self-declarations that they are not misrepresenting or making false claims about products, especially in the health and food sectors, before promoting them in the electronic, print, or online media was not meant to harass the advertising industry.

Groups such as the Advertising Association of India and the Internet and Mobile Association of India have applied to intervene in the top court seeking further clarification of the May 7 order.



The Bench asked the Information and Broadcasting Ministry to hold a brainstorming session with industry stakeholders along with the Consumer Affairs Ministry and the Health Ministry against the backdrop of the May 7 order.

“Industry should not suffer in any manner... The government has to continue to churn out ideas to address the issue,” Justice Kohli said. The Centre was ordered to file an affidavit detailing the outcome of the meeting in three weeks.

Earlier hearings based on a contempt petition filed by the Indian Medical Association had witnessed the court pull up Patanjali, Ramdev, and his associate for airing claims that their products cure everything from diabetes to liver dysfunction and even COVID-19 in “deliberate and willful violations” of the Drugs and Magic Remedies (Objectionable Advertisements) Act of 1954 and its Rules.

The May 7 order had made self-declaration under Rule 7 of the Cable Television Networks Rules, 1994 mandatory before displaying, printing, or airing advertisements after holding that the “fundamental right to health encompasses the right of a consumer to be made aware of the quality of products being offered for sale by manufacturers, service providers, advertisers and advertising agencies”.

WHY SUPREME COURT HELD LOCATION SHARING OF AN ACCUSED CANNOT BE A BAIL CONDITION

The Supreme Court on Monday (July 8) held that courts cannot impose bail conditions that require accused persons to share their location on Google Maps.

A Bench comprising Justices Abhay S Oka and Ujjal Bhuyan also held that in cases where the accused is a foreign national, courts cannot demand a “certificate of assurance” from relevant Embassies or High Commissions that the accused will not leave the country.

On May 31, 2022, the Delhi High Court granted bail to Nigerian national Frank Vitus in a drug smuggling case, subject to the condition that he and co-accused Ebera Nwanaforo “shall drop a PIN on the Google map to ensure that their location is available to the Investigation Officer of the case”. They were also required to obtain a certificate of assurance from the High Commission of Nigeria saying they would not leave the country.

Why did the SC reject Delhi HC’s unusual conditions?

After considering an affidavit submitted by Google, which clarified that sharing a pinned location “does not enable real-time tracking of the user or their device”, the SC held that the condition imposed was “completely redundant” as it does not help authorities track the accused persons.

The court also held that “any bail condition which enables the Police/ Investigation Agency to track every movement of the accused by using any technology or otherwise would undoubtedly violate the right to privacy guaranteed under Article 21”. The court then ordered the removal of this condition.

On the subject of the “certificate of assurance”, the court held that the grant of such a certificate is “beyond the control of the accused”, and ordered the removal of this condition as well. It stated that if the Embassy does not grant such a certificate within a reasonable time, the accused “cannot



be denied bail” on the basis of a condition which is simply “impossible for the accused to comply with”.

What was the case about?

In May 2014, Vitus, Nwanaforo, and one Eric Jayden were arrested in Mahipalpur, Delhi by Narcotics Control Bureau (NCB) officials who claimed to have received “secret information” regarding a consignment of drugs. According to the NCB, the three were in a taxi at the time, and Jayden was found carrying a bag containing 1.9 kg of Methamphetamine.

Vitus and Nwanaforo argued in court that there was no incriminating evidence on their person. They said that they had been incarcerated for eight years, and were thus entitled to bail as per the SC’s directions in Supreme Court Legal Aid Committee Representing Undertrial Prisoners vs Union of India & Ors (1994).

In this case, the SC had held that when there is a delay in disposing of cases under the NDPS Act, if the accused is charged with an offence punishable with 10 years’ imprisonment or more, they “shall be released on bail if he has been in jail for not less than five years provided he furnishes bail in the sum of Rupees one lakh with two sureties for like amount”. Other “general conditions” included, in the case of foreign nationals, obtaining a “certificate of assurance” from the relevant Embassy stating that they will not leave the country.

In line with this, the Delhi HC granted bail to Vitus and Nwanaforo, but added the requirement of submitting their Google Maps pin.

SECULAR REMEDY

In holding that a divorced Muslim woman is not barred from invoking the secular remedy of seeking maintenance under the Code of Criminal Procedure (CrPC), the Supreme Court of India has done well to clarify an important question concerning the impact of a 1986 law that appeared to restrict their relief to what is allowed in Muslim personal law alone. The enactment of the Muslim Women (Protection of Rights on Divorce) Act, 1986, was a watershed moment that is seen as having undermined the country’s secular ethos by seeking to nullify a Court judgment in the Shah Bano case (1985), which allowed a divorced Muslim woman to apply for maintenance from a magistrate under Section 125 of the CrPC. Subsequently, the 1986 law was upheld by a Constitution Bench in 2001 after coming close to declaring its provisions unconstitutional for discriminating against Muslim women. The Act was declared valid after the Bench read it down in such a way as not to foreclose the secular remedy for Muslim women. Several High Court judgments took different views on whether Muslim women should avail of Section 3 of the 1986 Act or Section 125 of CrPC. The latest verdict by a Bench of Justice B.V. Nagarathna and Justice Augustine George Masih settles this question by holding that the codification of a Muslim woman’s rights in the 1986 Act — including the right to maintenance during the Iddat period, provision for a dignified life until she remarries, and return of mehr and dowry — was only in addition to and not in derogation of her right to seek maintenance like a woman of any other religion.

Justice Masih, in his main opinion, concludes that both the personal law provision and the secular remedy for seeking maintenance ought to exist in parallel in their distinct domains. While the CrPC may be invoked by a woman if she was unable to maintain herself, the 1986 Act makes it a Muslim husband’s obligation to provide for his divorced wife and her children up to a certain point. Justice Nagarathna, in her concurring opinion, looks at the social purpose behind the provision for



maintenance in the CrPC, namely that it aims to prevent vagrancy among women by compelling the husband to support his wife. The 1986 Act codified the right available to a divorced Muslim woman in personal law. This right is in addition to, and not at the cost of, the rights available in existing law. The verdict is a great example of the Court using harmonious interpretation to expand the scope of rights as well as to secularise access to remedies. In the process, the Court has also neutralised the perception that the right of Muslim women to seek maintenance under secular provisions stood extinguished since 1986.

WHY HAS ANI SLAPPED A DEFAMATION CASE AGAINST WIKIPEDIA?

News agency Asian News International (ANI) has moved Delhi High Court against Wikipedia for allowing allegedly defamatory content on ANI's wiki page.

A Bench of Justice Navin Chawla has sought a response from Wikipedia, and listed the matter for further hearing on August 20.

Complaint against Wikipedia

The petitioner has sought damages to the tune of Rs 2 crore, alleging that the said content is "palpably false" and defamatory, and that its reputation was being tarnished and goodwill discredited.

The petition contends that the "false and misleading content" on Wikipedia raised doubts about ANI's credibility as a news agency. It says that the editing history of the page shows that in April, a series of edits were made reflecting the true and factual position, but these were "deliberately reversed" in May to cause harm to the petitioner's reputation.

Content posted on Wikipedia

Wikipedia, which started in 2001, itself does not produce the content for its online encyclopedia. It is a collaborative, open source, nonprofit platform whose users contribute to the content of the website. The suit against Wikipedia, rather than the individuals who could have made the edits to the page, is intended to ensure enforcement by holding the intermediary liable.

Laws invoked in the case

ANI has argued that Wikipedia is a significant social media intermediary under the meaning of Section 2(1)(w) of the Information Technology Act, 2000: "any person who on behalf of another person receives, stores or transmits that record or provides any service with respect to that record and includes telecom service providers, network service providers, Internet service providers, web-hosting service providers, search engines, online payment sites, online-auction sites, online-market places and cyber cafes".

The petitioner has also relied on Sections 79(2) and (3) of the Act, which lay down the requirements for the "safe harbour clause" to come into effect.

The safe harbour clause

Section 79 of the IT Act (Exemption from liability of intermediary in certain cases) states that an intermediary shall not be held legally or otherwise liable for any third-party information, data, or communication link made available or hosted on its platform.



This protection shall be applicable if the intermediary does not in any way initiate the transmission of the message in question, select the receiver of the transmitted message, or modify any information contained in the transmission, according to Section 79(2)(b).

Another requirement for safe harbour protection is that the intermediary must adhere to the Intermediary Guidelines and Digital Media Ethics Code, which came into force in 2021. The guidelines mandated setting up a grievance-redressal mechanism, along with a resident grievance officer, a chief compliance officer, and a nodal contact person.

Section 79(3) states that the protection will not apply if the intermediary, despite being informed by the government or its agencies, does not immediately remove or disable access to the material in question.

Additionally, the intermediary cannot tamper with any evidence of these messages or content on its platform, failing which it would lose its protection under the Act.

Rule 7 of the IT Rules, 2021 states that if “an intermediary fails to observe these rules, the provisions sub-section (1) of section 79 of the Act shall not be applicable”, and “the intermediary shall be liable for punishment under any law for the time being in force”.

Section 230 of the US Communications Decency Act is analogous to Section 79 of the IT Act. It states that “no provider or user of an interactive computer service shall be treated as the publisher or speaker of any information provided by another information content provider”.

Previous rulings of SC

On October 10, 2022, the Supreme Court dismissed a batch of petitions filed by the Ayurvedic Medicine Manufacturers Organisation of India, alleging that an article published on Wikipedia about them was defamatory. A bench of Justices A S Bopanna and P S Narasimha said, “You can edit the Wikipedia article,” and asked the petitioners to avail “any other remedy available to them” under the law.

On January 17, 2023 a Bench of Justices Vikram Nath and Surya Kant in *Hewlett Packard India Sales vs. Commissioner of Customs* noted that adjudicating authorities, especially the Commissioner of Customs (Appeal), had extensively referred to online sources such as Wikipedia to support their conclusion.

The court said: “While we...acknowledge the utility of these platforms which provide free access to knowledge across the globe, but we must also sound a note of caution against using such sources for legal dispute resolution. ...These sources...are based on a crowd-sourced and user-generated editing model that is not completely dependable ...and can promote misleading information.”

NGO WORKING ON RIGHTS ISSUES LOSES FCRA REGISTRATION

The Union Home Ministry on Wednesday cancelled the Foreign Contribution Regulation Act (FCRA) registration of the parent entity of the non-profit Centre for Financial Accountability (CFA), which monitors and critically analyses the role of financial institutions and their impact on development, human rights, and the environment.

In a recent report, the CFA had highlighted how additional projects sanctioned in a Special Economic Zone operated by the Adani Group in the Kutch region of Gujarat “will compound

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environmental hazards and increase health risks for the people while further polluting the environment and accelerating degradation of the ecology”.

In December 2023, the CFA organised an online meeting with the All-India Bank Officers Confederation to discuss the issues faced by public sector banks and the road ahead. Speaking with The Hindu, Joe Athialy, Executive Director, CFA said they were yet to receive the orders cancelling the FCRA registration of CACIM (India Institute for Critical Action Centre in Movement), but they had been informed online. CFA is one of the projects of CACIM. “We have been told that the cancellation is due to the incorrect filings [of return] of financial years 2018 and 2019. This may be just an excuse, as they had all the years to ask us to rectify the mistakes. We certainly believe that the work we did has contributed to this action,” Mr. Athialy said. He said the government wanted to throttle the organisations that were critical of its work.

“We are not going to get bogged down by such actions. We will continue our work. We recognise that the government wanted to throttle our work. We will find innovative ways to carry forward our work, which includes domestic donations. There is a life beyond FCRA,” he said.

Earlier in January, the Ministry cancelled the FCRA registration of Centre for Policy Research (CPR), a leading public policy research institution in New Delhi.

Since 2015, the FCRA registration of more than 16,000 NGOs have been cancelled on account of “violation.” As on Wednesday, there were 15,946 FCRA-registered NGOs active in the country. The FCRA registration of nearly 6,000 NGOs had ceased to operate from January 1, 2022 as the Ministry either refused to renew their application or the NGOs did not apply for renewal.

WHAT ARE NEW PROVISIONS FOR POLICE OFFICERS?

The story so far:

The new criminal laws have become effective from July 1. SOPs have been issued by the Bureau of Police Research and Development (BPRD) to guide police officers in implementing the new provisions.

What are rules for registering FIRs?

The officer in-charge of a police station cannot refuse to register an FIR on the basis of lack of jurisdiction or disputed jurisdiction. He is legally bound to register (popularly known as a zero FIR) and transfer such a case to the respective police station. Though this practice was followed earlier too, the Bharatiya Nagarik Suraksha Sanhita (BNSS) now has a direct provision under Section 173; non-registration of FIRs may attract penal action under various sections.

Additionally, while information can be given orally or in writing as before, it may also be given by electronic means which is to be taken on record by the officer in-charge if it is signed within three days by the person giving it. While no one can stop a police officer from enquiring into the information immediately if it is of a sensitive nature, the electronic mode by which information may be given must be decided by the agencies, such as the Crime and Criminal Tracking Network and Systems (CCTNS) portal, the police website or officially published email IDs.

What about videography?

The BNSS mandates videography during a search conducted by the police under Section 185; of the scene of crime (Section 176); and of the process of conducting a search of a place or taking



possession of any property (Section 105). Since these are mandatory provisions, any negligence on the part of the police may benefit the accused persons. Therefore, investigating officers (IOs) must be provided electronic devices and proper training to discharge such functions.

A cloud-based mobile app, 'eSakshya' has been designed by the National Informatics Centre for enforcement agencies, which allows capturing multiple photos and videos. The photographs of witnesses and selfies of IOs may be captured using this app. Each item is geo-tagged and time-stamped to ensure the integrity of data. Since eSakshya is an initiative under the Inter-operable Criminal Justice System (ICJS), this data will be available to other agencies such as the judiciary, prosecution and cyber forensic experts.

What about provisions of arrest?

Information about arrested persons is to be mandatorily displayed in police stations. Section 37 of the BNSS requires a police officer in every police station, not below the rank of Assistant Sub-Inspector, to be responsible for maintaining and prominently displaying information about the arrested persons. Therefore, boards (including in digital mode) containing names, addresses and the nature of the offence must be put up outside police stations and district control rooms.

Some restriction has been imposed on the arrest of frail or sick and elderly persons. Section 35(7) states that the permission of an officer not below the rank of DySP is mandatory for arresting a person charged with an offence punishable for imprisonment of less than three years if such person is infirm or is above 60 years of age. Similarly, though the law now provides for the use of handcuffs in certain cases, the IOs must use them cautiously. The Supreme Court has laid down that handcuffing may be done only when there is a possibility of escaping from custody or causing harm to himself or others.

What about timelines?

In case of medical examination of a victim of rape, the registered medical practitioner is mandated under Section 184 (6) of the BNSS to forward the medical report to the IO within seven days, who shall forward it to the magistrate concerned. Therefore, doctors must be sensitised about the new law. The investigation of POCSO cases is required to be completed within two months of recording the information of the offence. Earlier, this time limit was only for rape cases under the Indian Penal Code.

A new provision under Section 193(3)(h) requires the IO to maintain the sequence of custody of an electronic device. Though maintaining a chain of custody is important for every seizure, emphasis is laid on electronic devices because they are sensitive pieces of evidence and more vulnerable to tampering. While every police officer is required to upgrade his skills about maintaining integrity of electronic records, the task of the (cyber) expert is likely to increase with many of the mandatory provisions coming into effect. This sub-section also imposes a duty to inform the progress of the investigation within 90 days to the informant or victim.

Section 113 introduced in the Bharatiya Nyaya Sanhita (BNS) defines what is a 'terrorist act' and imposes the duty on an officer, not below the rank of Superintendent of Police (SP), to decide whether to register a case under this Section or the UAPA. Since, no guidelines are given to exercise this discretion, the SP may inter-alia consider factors such as whether the terrorist organisation is notified under the UAPA, approximate time needed to complete investigation, the rank of the IO and the level of scrutiny required, and how dangerous the accused person is.



ON EXPUNCTION POWERS IN PARLIAMENT

The story so far:

The first special session of the 18th Lok Sabha witnessed heated discussions, with the Opposition clashing with the government over a range of issues, ultimately concluding with a war of words over the expunction of the remarks of the leaders of Opposition in both Houses. Rajya Sabha Chairman Jagdeep Dhankhar removed portions of Leader of Opposition (LoP) Mallikarjun Kharge's speech, which was critical of Prime Minister Narendra Modi and the Rashtriya Swayamsevak Sangh. Meanwhile, in the Lower House, parts of Rahul Gandhi's remarks on the PM and the BJP were expunged from the records on the orders of Speaker Om Birla, sparking allegations of different yardsticks being applied for different MPs.

When are remarks expunged?

Parliament maintains a verbatim record of everything that is spoken and takes place during proceedings. While Article 105 of the Constitution confers certain privileges and freedom of speech in Parliament on MPs, it is subject to other provisions of the Constitution and the rules of the House. On the orders of the presiding officer, that is, the Chairman in the Upper House and the Speaker in the Lower House, words, phrases and expressions which are deemed "defamatory, indecent, unparliamentary or undignified" are deleted or expunged from records. For this purpose, the Lok Sabha Secretariat maintains a comprehensive list of 'unparliamentary' words and expressions.

The rules of parliamentary etiquette, which are laid out to ensure discipline and decorum in the Rajya Sabha, say, "When the Chair holds that a particular word or expression is unparliamentary, it should be immediately withdrawn without any attempt to raise any debate over it. Words or expressions held to be unparliamentary and ordered to be expunged by the Chair are omitted from the printed debates."

There have been recorded instances where the scope of expunction has been broadened. Speakers, at their discretion, have ordered the expunction of words deemed prejudicial to national interest or detrimental to maintaining friendly relations with a foreign State, derogatory to dignitaries, likely to offend national sentiments or affect the religious susceptibilities of a section of community, likely to discredit the Army, not in good taste or otherwise objectionable or likely to bring the House into ridicule or lower the dignity of the Chair, the House or the members, authors M. N. Kaul and S. L. Shakhder note in their book Practice and Procedure of Parliament. For instance, Prime Minister Jawaharlal Nehru once objected when a member referred to the President of Pakistan while asking a supplementary question about the international situation. Mr. Nehru said it would "not be proper" for the Head of a foreign state to be mentioned in the language the member had used. The objectionable words were then expunged.

Members must withdraw objectionable remarks deemed irrelevant to the debate upon the Chair's request and failure to comply may lead to expunction. Similarly, quoting from an unreferenced document or speaking after being asked to desist can result in an expunction.

What about remarks against an MP?

If an MP makes an allegation against their colleague or an outsider, Rule 353 of the Lok Sabha outlines the procedural framework to be followed. "The Rule does not prohibit the making of any allegation. The only requirement is advance notice, on receipt of which the Minister concerned



will conduct an inquiry into the allegation and come up with the facts when the MP makes the allegation in the House,” former Lok Sabha Secretary General P.D.T. Achary says. If the allegation is neither defamatory nor incriminatory, the above rule would not apply, he adds.

“The rule does not obviously apply to an allegation against a Minister in the government. Since the Council of Ministers is accountable to Parliament, the Members of the House have the right to question Ministers and make imputations against their conduct as Ministers,” Mr. Achary adds.

How do officers expunge remarks?

The Chairman and Speaker are vested with the power to order the expunction of remarks under Rule 261, and Rule 380 and 381 of the Rules of Procedure of the Rajya Sabha and Lok Sabha, respectively.

Rule 261 states, “If the Chairman is of opinion that a word or words have or have been used in debate which is or are defamatory or indecent or unparliamentary or undignified, he may in his discretion, order that such word or words be expunged from the proceedings of the Council.” The Lower House has a similar provision.

The expunged portions are marked by asterisks with an explanatory footnote stating ‘expunged as ordered by the Chair.’ If the Chair directs that nothing will go on record during a member’s speech or interruption, footnote ‘not recorded’ is inserted. A comprehensive list of words and phrases is circulated to media outlets at the end of the day’s proceedings. Once expunged, these words or phrases cease to exist on the official record. However, the relevance of the practice of expunging remarks has lately come into question, in a digital age where expunged content remains accessible due to the live telecast of proceedings and wider circulation of screenshots and videos on social media.

FOR WOMEN-FRIENDLY WORKPLACES, A LARGER CONVERSATION ABOUT MENSTRUAL LEAVE IS A GOOD STARTING POINT

The Supreme Court’s comment on Monday that a mandatory menstrual-leave policy might be counter-productive for women in the workforce is an intervention in what has proved to be a contentious issue not just in India but across the world. The three-judge bench, hearing a plea to implement menstrual leave for women under the Maternity Benefit Act, 1961, urged the Centre to frame a model policy in consultation with states and stakeholders, ensuring that fear of its misuse as a basis for discrimination does not deter the entry of women into the workforce.

Working women are already set back by the motherhood penalty and workplace housekeeping — pregnancy and child rearing that stall their progress, and the assignment of menial administrative tasks that men at the same professional level would not volunteer for or be assigned. Menstrual leave runs the risk of becoming one more obstacle course that women have to navigate for employment and career advancement. In December last year, the former Union Women and Child Development Minister, Smriti Irani, had told the Rajya Sabha that she was opposed to the idea of a paid menstrual leave personally because she did not want women to face discrimination over “a natural part of a woman’s life journey”. There is some truth in her words. The pathologisation of a biological process can further the stigma instead of alleviating it. Yet, for those suffering from conditions such as endometriosis and dysmenorrhea, the discomfort that accompanies their menstrual cycles has a real impact on their performance at work. All these necessitate a careful



calibration of how policy is framed, with guidelines and safeguards built in against misuse at either end.

While countries such as Taiwan and Zambia have instituted menstrual-leave policy, implementation has remained a hurdle. In June 2023, when Spain became the first European nation to introduce paid menstrual leave, it was seen as a move towards greater gender parity. In the year since, data has shown that very few women have availed of it, either because the process is onerous or due to a fear of discrimination. In Indonesia, the two-day menstrual leave has few takers as policy mandates a medical examination to avail it. The apex court's comment, therefore, comes as a welcome opportunity for greater deliberation on a policy that can strike an equilibrium between an acknowledgement of women's biological needs and an accommodation of workplace demands. The draft menstrual hygiene policy released by the government last year outlined the provision of flexible hours and support leaves: "... such arrangements should be available to all, to prevent perpetuating stigmas or assumptions about productivity based on menstrual cycles," It could be a starting point.

LOCKED IN CONFLICT

In calling for a report from the State government on the action taken against two police officers, West Bengal Governor C.V. Ananda Bose has escalated the conflict between Raj Bhavan and the State government. He has written to the Union government and to the Chief Minister, Mamata Banerjee, about what he perceives as impropriety by Vineet Goyal, Kolkata City Police Commissioner, and Indira Mukherjee, a Deputy Commissioner of Police. The Governor is aggrieved that they made remarks pertaining to an investigation into a complaint of alleged sexual harassment that a Raj Bhavan employee had made against him. While the complaint has not been acted upon — as Mr. Bose enjoys immunity from proceedings under Article 361 of the Constitution — it has become a thorny issue, with the Governor believing that the police officers had flouted the rules of conduct in speaking about an investigation that cannot be instituted or continued. His consternation is also because he believes the Commissioner had stopped a group of people with grievances about post-election violence from meeting him, even though he had agreed to meet them. The Governor has also demanded a report on the action taken with regard to a woman being disrobed in public, a couple being flogged and other incidents of mob violence, undoubtedly a legitimate request.

The Governor is indeed authorised to seek information from the State government under Article 167. Whether disciplinary action involving central service officers, normally within the domain of the State governments when they are serving the State, can be initiated at the instance of the Governor or the Union government is a separate question altogether. Mr. Bose has cited circumstances surrounding the harassment complaint against him to argue that it is a "concocted allegation", "induced and facilitated" by the police. However, it may not be in anyone's interest to escalate such issues by asking for punitive action against officers. At a time when personal squabbles and institutional conflicts between Governors and Chief Ministers are on the rise, the development is likely to be seen as one more stand-off involving the politicisation of Raj Bhavan by incumbents seeking to undermine elected regimes. The two sides appear locked in perennial conflict, mirroring the antagonism between the Centre and the State. There is the usual one over grant of assent to Bills, and a recent one involves the question who should administer the oath of office to newly elected legislators. And there is a defamation suit the Governor has filed against the Chief Minister. Constitutional functionaries should pull back from the brink before they are sucked into a political rabbit hole.



THE PROBLEM OF SPECIAL PACKAGES

Coalition politics is back at the Union level in a substantial way. The Bharatiya Janata Party is dependent on the Janata Dal (United) of Bihar and the Telugu Desam Party of Andhra Pradesh for its parliamentary majority. This is in contrast to 2014 and 2019, when de facto single-party governments came to office. With single-party majority becoming a thing of the past, demand for State-specific discretionary grants, or 'special packages', are back with a bang in public discussion.

The positive aspect of single-party dominance being tempered by the presence of coalition partners that can act as a check if unitary trends surge cannot be underestimated. Nevertheless, this is the time to test the hypothesis that when single-party dominance at the Union level fades, federal tendencies bloom and when a single-party majority under a strong leader at the Union level prevails, federal tendencies wilt.

If a healthy federal structure is to be nurtured, the fiscal boundaries, principles of assignment of taxes, and the basis for grants have to be transparent and objective. A federal setup can be asymmetric in a country that is characterised by linguistic, cultural, and economic diversity. But issues of asymmetry should be addressed by means of constitutional provisions that have both transparency and stability.

The Constitution has provisions that address the issues of specific States, or States that have a special status with regard to certain matters mentioned in the Constitution. These provisions are covered, for instance, in Articles 371A to H (Article 370 for the erstwhile State of Jammu and Kashmir, of course, is abrogated).

Purely discretionary

On the contrary, special packages are purely discretionary. They may be need-based, but the need is not the proximate reason for granting a special package, which is an additional grant under Article 282, which falls under 'Miscellaneous Financial Provisions'. More often than not, they are the result of the bargaining power of some State-level political parties that can tilt the scales of parliamentary majority. What does this augur for the health of our federal set-up?

That the outcome of an election can determine the fiscal distribution of national resources to a State or States goes against the grain of fiscal federalism (or, more correctly, of federal finance). Some States may be justified in their demands for funds, but allocation has to be through the mechanism of the Finance Commission. The Commission is constituted by the President every five years or earlier to make recommendations regarding the distribution of a share of taxes collected by the Union to the States, and how this is to be distributed among the States, as per Article 280; and disbursement of grants to States in need of assistance, as provided in Article 275. The 16th Finance Commission, which is already in existence, cannot be bypassed solely on account of partisan political exigencies.

When the same political party is in power at the Union and State levels, it is called a 'double-engine sarkar'. The main engine has lost the power to run on its own and the owners of smaller engines that are needed to pull the train along are making their own demands. While individual States may well need special packages, process is of the utmost importance. How have these events impacted the political and fiscal relations between the Union and the States?



Federal tendencies

The first issue here is the extent to which our polity is federal. The Constitution has been famously described as having a quasi-federal framework. C.H. Alexandrowicz, however, disputed this description in his work *Constitutional Developments in India* (1957), stating that in situations other than an Emergency, it assumes a federal character. The Supreme Court has made the succinct observation that our polity is amphibian — it can assume unitary and federal characters depending on whether or not there is an Emergency under Articles 352 and 356 in force (*State of Rajasthan and Others v Union of India*, 1977).

Be that as it may, it is often argued that the prevailing political environment crucially determines whether federal tendencies bloom or wilt. Keeping this proposition in mind, the hypothesis stated above can be put to test.

How fiscal distribution is done is cardinal in the test of whether or not federalism is strong. In the recent past, some States raised concerns about their share in the divisible pool of Union taxes facing a decline. Tax distribution is formula-based, and it is for the 16th Finance Commission to address this issue and undertake the delicate task of balancing the interests of the States inter se, and with those of the Centre.

The focus here is on grants, in the disbursement of which scope for discretion is wider. In our constitutional framework, the primary task of recommending grants to States in need of assistance is that of the Finance Commission, until Parliament makes legislation in this regard.

But the fact now is that the flow of discretionary grants to the States through Article 282 have far overtaken (by almost a factor of four) that of the grants recommended by the Finance Commissions. Acceding to demands for special packages which are raised by State-based parties, holding the key to parliamentary majority, will weaken the foundations of fiscal federalism, as it will result in diverting national resources away from other States, which too may have pressing needs. If this is allowed to happen, we will see the paradox of federal tendencies wilting instead of blooming when single-party dominance fades.

THE CASE FOR A CASTE CENSUS

Peter Drucker famously said, “Only what gets measured gets managed.” The problems of social groups that have been historically discriminated against (be it by caste, race, religion, gender, disability etc.) cannot be resolved without collecting data group-identity wise. Doing so is not a capitulation to identity politics but a vital step towards informed policy making and inclusive development.

For instance, Germany’s census does not enumerate people by race. This has worked to the disadvantage of its Black people who started a private, country-wide, online survey called Afrozensus in 2020. Its results showed that anti-Black racism is widespread and institutionally entrenched in Germany. Applying Cicero’s test of *cui bono* (who benefits?), it can be said that the demand for enumeration generally emanates from the victims of discrimination and is resisted by vested interests.

Why a caste Census?

A caste Census is crucial for four reasons — one, it is a social imperative. Caste continues to be a foundational social construct in India. Only about 5% of Indian marriages were inter-caste as of



2011-12. The use of caste surnames and caste marks is still widespread. Residential segregation by caste persists. Choices of candidates for elections and ministers for Cabinets continue to be dictated by caste considerations.

Two, it is a legal imperative. Constitutionally-mandated policies of social justice which include reservations in electoral constituencies, education and public employment cannot be pursued effectively without detailed caste-wise data. Even though the Constitution uses the word class instead of caste, various rulings of the Supreme Court have held caste as a 'relevant criterion', 'sole criterion' or 'dominant criterion' for defining a backward class, and have demanded detailed caste-wise data for upholding reservation policies.

Three, it is an administrative imperative. Detailed caste-wise data is necessary to avoid/correct wrongful inclusions of undeserving castes and exclusions of deserving castes, and to guard against a few dominant castes in a reserved category crowding out others. It is also needed for sub-categorising castes within a reserved category and to determine the income/wealth criterion for the creamy layer.

Four, it is a moral imperative. The absence of detailed caste-wise data has helped a coterie of elites, among upper castes and dominant Other Backward Classes (OBCs), to corner a disproportionate share of the nation's assets, incomes, and positions of power.

Censuses in British India between 1881 and 1931 enumerated all castes. In the first Census conducted after Independence in 1951, the Government of India (GOI) ordered that caste should not be enumerated. However, an exception was made for Scheduled Castes (SCs) and Scheduled Tribes (STs) which have been enumerated in every Census since 1951. In 1961, the GOI advised States to conduct their own surveys and draw up State-specific OBC lists if they so desired. There was no reservation for OBCs in the Centre and its undertakings then.

The arguments against caste Census

There are multiple views against the caste Census. These include:-

First, that it is socially divisive. India's social divisions predate Census efforts by nearly 3,000 years. The Census counts of the SCs and STs since 1951 have not led to any conflicts among these castes or tribes. Further, India's Census enumerates religion, language, and region which are as divisive as caste, if not more. Casteism will not wither away by not counting caste in the Census, any more than communalism, and regionalism will disappear by not enumerating religion, language and region.

Second, that it is an administrative nightmare. Unlike race which is a fuzzy concept, but is still enumerated in many countries such as the U.S., there is little or no ambiguity about anyone's caste. The GOI has been able to smoothly enumerate 1,234 castes in the SC category and 698 tribes in the ST category. Therefore, it is difficult to understand why the enumeration of the 4,000-odd other castes, most of which are State-specific, should pose an intractable problem.

Third, that it would fuel demands for increased reservations. On the contrary, the availability of caste-wise Census data would help curb arbitrary demands from caste groups and capricious decision-making by governments. Policy makers would be able to objectively debate and address the claims of, say, the Marathas, Patidars, Jats, or any other groups for reservations. But governments prefer fuzzy data because it gives them the latitude to implement reservations arbitrarily for electoral considerations.



The case for OBC inclusion in Census

Like the SCs and STs, the Constitution permits reservation for the OBCs in education (Article 15(4)) and public employment (Article 16(4)). After the implementation of the Mandal Commission recommendations, the OBCs enjoy reservations in the Central government and its undertakings as well. In the Indra Sawhney case (1992), the Supreme Court ruled that the OBC list, based on the 1931 Census, should be revised periodically.

The OBCs do not have reservation in electoral constituencies for MPs and MLAs like the SCs and the STs. But after the 73rd and 74th amendments (1993), the Constitution provides for reservations in electoral constituencies in panchayats and municipalities not only for SCs and STs but also for OBCs (Articles 243D(6) and 243T(6)). For this, caste-wise, area-wise Census data of the OBCs is essential. Therefore, the GOI should have enumerated the OBCs at least in the 2001 Census. But it did not.

Whenever States like Uttar Pradesh, Madhya Pradesh, Gujarat, Maharashtra, Karnataka, Odisha and Jharkhand tried to implement reservations for the OBCs in elections to local bodies, the High Courts and the Supreme Court stayed the same, on the ground that there was no caste-wise data of OBCs. While one arm of the State — the judiciary — demands caste-wise data to uphold reservations, another — the executive — has avoided enumerating the very same data.

However, the 10% reservation for economically weaker sections (EWS) among those other than the OBCs, SCs and STs (effectively, the upper castes) was upheld by the Supreme Court in 2022 despite the absence of any supporting empirical data. In view of the EWS reservation, the Census should now enumerate all castes including the upper castes as it did till 1931.

While Census is a Union subject, the Collection of Statistics Act, 2008 empowers States and even local bodies to gather the necessary statistics. So, individual States can always do Caste surveys like Karnataka (2015) and Bihar (2023) did. But Census data carries more authority and is less contested. The government's reluctance to enumerate caste as part of the Census is legally indefensible and administratively unwise.

How an attempt at caste Census failed

After considerable lobbying by OBC leaders, in 2010, the Parliament passed a unanimous resolution (with both Congress and BJP on board) calling for caste to be enumerated as part of the 2011 Census. As per the 1931 Census when caste was last enumerated, there were 4,147 castes in India apart from the depressed classes/untouchables (as they were called then). Unfortunately, the Socio Economic and Caste Census (SECC)-2011 was poorly designed and executed, throwing up a ludicrous figure of 46 lakh castes and the results were never released.

The SECC-2011's failure was because of the fact that it was not conducted under the Census Act, 1948 as the Act was not amended to include caste as a parameter. It was conducted through the Union Ministries of Rural Development and Urban Development which did not have prior experience of conducting sociological/anthropological surveys. Additionally, the questionnaire was poorly designed and asked open-ended questions about caste. The enumerators couldn't distinguish between genuine castes, alternative caste names, larger caste groups, sub-castes, surnames, clan names, gotras, etc. In contrast, the Bihar government's Caste Survey in 2023, provided enumerators the list of 214 caste names specific to Bihar, with the 215th category labelled "Other Castes" and came up with better results.



Despite the unanimous Parliamentary resolution of 2010, the Central government announced in 2021 that it would not enumerate caste as part of the next Census. It reiterated this stand before the Supreme Court in a case filed by the Maharashtra government seeking a direction to the Centre to enumerate OBCs in the 2021 Census. The Supreme Court judgment dismissing the Maharashtra government's plea in December 2021 is questionable, considering its own past rulings.

What is the way forward?

Learning from the SECC-2011 failures, the Census Act, 1948 should be amended to make enumeration by caste mandatory instead of leaving it to the whims of the Union executive. Caste should be enumerated as part of the regular Census by the Census Commissioner only, with a few pertinent questions added to the questionnaire. Additionally, the government should enlist sociological/anthropological experts to draw up a draft list of castes specific to each State, publish the draft list online, inviting suggestions and comments from the public before finalising it, and give only that list to the enumerators. The questionnaire should be so designed as to ask the names of the sub-caste, caste, larger caste group, and the caste surname of the respondent. Internet-enabled hand-held devices preloaded with these details and limiting the enumerator's role to one of choosing the correct option will make the task easy and foolproof.

Interested States must move the apex Court to review its 2021 judgment. It is farcical to implement OBC reservation based on 1931 Census data and EWS reservation with no empirical data. The next Census must enumerate caste.

WHAT IS THE DRAFT DIGITAL COMPETITION BILL?

The story so far:

In February 2023, the Ministry of Corporate Affairs (MCA) constituted a Committee on Digital Competition Law (CDCL) to examine the need for a separate law on competition in digital markets. The CDCL deliberated on the issue for a year and came to the conclusion that there was a need to supplement the current ex-post framework under the Competition Act, 2002 with an ex-ante framework. It laid out this ex-ante framework in the draft Digital Competition Bill.

What is an ex-ante framework?

The Competition Act, 2002 is the primary legislation concerned for preventing practices that have an adverse effect on competition. It establishes the Competition Commission of India (CCI) as the national competition regulator. As with competition law in all other jurisdictions, the Competition Act, 2002 is based on an ex-post framework. This means that the CCI can use its powers of enforcement only after the anti-competitive conduct has occurred.

In the case of digital markets, the CDCL has advocated for an ex-ante competition regulation. This means that they want the CCI's enforcement powers to be supplemented such that it allows it to pre-empt and prevent digital enterprises from indulging in anti-competitive conduct in the first place.

Ex-ante competition regulation is unusual. The European Union is the only jurisdiction where a comprehensive ex-ante competition framework, under the Digital Markets Act, is currently in force. The CDCL agrees with this approach because of the unique characteristics of digital markets. First, digital enterprises enjoy economies of scale and economies of scope, that is, reduction in cost of production per unit as the number of units increase and reduction in total costs of



production with increase in number of services respectively. This propels them to grow rather quickly as compared to players in the traditional market. Second, this growth is aided by network effects — utility of the digital services increases with the increase in the number of users.

In this context, given that markets can tip relatively quickly and irreversibly in favour of the incumbents, it was found that the extant framework provided for a time consuming process, allowing offending actors to escape timely scrutiny. Therefore, the CDCL has advocated for preventative obligations to supplement the ex-post facto enforcement framework.

What is the draft's basic framework?

The draft Bill follows the template of the EU's Digital Markets Act. It does not intend to regulate all digital enterprises, and places obligations only on those that are “dominant” in digital market segments. At present, the draft Bill identifies ten ‘core digital services’ such as online search engines, social networking services, video sharing platform services etc. The draft Bill prescribes certain quantitative standards for the CCI to identify dominance of digital enterprises. These are based on the ‘significant financial strength’ test which looks at financial parameters and ‘significant spread’ test based on the number of users in India. Even if the digital enterprise does not meet quantitative standards, the CCI may designate an entity as a “systemically significant digital enterprise (SSDE)” based on qualitative standards.

The primary obligation of SSDEs is to not indulge in anti-competitive practices. These require the SSDE to operate in a fair, non-discriminatory and transparent manner with its users. The draft Bill prohibits SSDEs from favouring its own products on its platform over those of third parties (self-preferencing); restricting availability of third party applications and not allowing users to change default settings; restricting businesses users of the service from directly communicating with their end users (anti-steering) and tying or bundling of non-essential services to the service being demanded by the user. SSDEs also cannot cross utilise user data collected from the core digital service for another service and non-public data of users cannot be used to give unfair advantage to the SSDE's own service.

What has been the response?

The overriding sentiment towards the draft Bill has been one of opposition. First, there is considerable scepticism on how well an ex-ante model of regulation will work. This stems in part from the fact that it seems to be transposed from the EU to India without taking into account differentiating factors between the two jurisdictions and the lack of evidence of it actually working well there. This is compounded by concerns of its potential negative effects on investments for start-ups in India and that they might be deterred to scale up to prevent meeting quantitative thresholds. Studies have also shown that restrictions on tying and bundling and data usage would negatively impact MSMEs that have come to rely significantly on big tech to reduce operational costs and enhance customer outreach.

Interestingly, a group of Indian start-ups have supported the draft Bill arguing that it would address concerns against monopolistic practices by big tech. However, they have argued for a revision of financial and user based thresholds citing concerns that it may lead to domestic start-ups being brought within the regulatory net.



'MONUMENTAL MOMENT': VIZHINJAM PORT WELCOMES ITS FIRST MOTHERSHIP

India's first deepwater transshipment port, the Vizhinjam international seaport near Thiruvananthapuram, on Thursday received its first mothership.

The MV San Fernando, carrying 2,000 containers, was given a grand welcome at the port. The berthing of the ship was part of a trial run at the port before it is slated to open for commercial operations.

Before the 300-metre-long Marshall Island-flagged container ship berthed at the port Thursday morning, tug boats gave it a water salute. The ship, operated by Bernhard Schulte Ship Management, Singapore, was hired by Maersk (AP Moller Group). It arrived from the Xiamen port in China.

On Friday, the state government will hold an official reception for the ship, which will leave for Colombo after unloading around 1,900 containers.

"This event signifies a monumental moment in Kerala's maritime history and stands as a testament to the unwavering commitment of the Left Democratic Front government to the state's development... Vizhinjam Port will create over 5,000 direct job opportunities and significantly boost the industry, commerce, transportation, and tourism sectors," Kerala Chief Minister Pinarayi Vijayan said in a post on X.

The Rs 7,600-crore transshipment deepwater multipurpose seaport project in Vizhinjam is being executed by Adani Ports and SEZ Private Limited on a design, build, finance, operate and transfer (DBFOT) model.

The project has been the subject of debate for years, with successive governments looking at various ways of executing it. Eventually, in 2015, the then Congress government in Kerala inked a deal with Adani Group, under which the group would invest Rs 2,454 crore, and another Rs 1,635 crore would be mobilised from the state and Central governments as viability gap funding. The Kerala government also gave 500 acres of land. The DBFOT deal is for 40 years, with provisions extending for another 20 years.

Vizhinjam is the first international deepwater transshipment port in the Indian subcontinent, with a natural depth of more than 18 metres, scalable up to 20 metres, which is crucial to allow entry of large vessels and motherships.

The port is located 10 nautical miles for the international shipping route. Other advantages of the port are minimal littoral drift along the coast and virtually no requirement of any maintenance dredging. The port is expected to compete with Colombo, Singapore, and Dubai for trans-shipment traffic. It is expected to bring down the cost of movement of containers to and from foreign destinations.

WHY LOCALS ARE PROTESTING AGAINST THE UPPER SIANG HYDROPOWER PROJECT IN ARUNACHAL PRADESH

The Upper Siang project is a proposed 11,000 megawatt hydropower project on the Siang river in the Upper Siang district of Arunachal Pradesh.



The Siang originates near Mount Kailash in Tibet, where it goes by the name of Tsangpo. It traverses more than 1,000 km eastward, before forming a horseshoe bend around the towering Namcha Barwa peak, and enters Arunachal Pradesh as the Siang. Further downstream, in Assam, the river becomes the mighty Brahmaputra.

In 2017, the government proposed to replace the planned 5,500 MW Siang Upper Stage-I and 3,750 MW Siang Upper Stage-II hydel projects with a single, multi-purpose project of higher capacity — the aforementioned Upper Siang project. Set to be built by the National Hydroelectric Power Corporation (NHPC), the project would entail the construction of a 300-metre high dam, the largest in the subcontinent, when completed.

According to a November 2022 report by the Central Electrical Authority, there are 29 hydroelectric projects (installed capacity of over 25 MW) in the Siang river basin, with a combined installed capacity of 18,326 MW. The proposed Upper Siang project's installed capacity is roughly 60% of this figure.

But more than its hydropower potential, the dam is being projected as a strategic imperative to counter China's hydel projects on the Tsangpo.

Officials have highlighted in particular the plan for a 60,000 MW 'super dam' in Tibet's Medog county, right on the border with Arunachal Pradesh. The super dam's installed capacity is almost three times that of the largest hydropower station on the planet — the Three Gorges Dam on the Yangtze river in China's Hubei province. It will be used to divert water to China's water-scarce northern regions.

Officials have stated that the Upper Siang project will act as a reservoir to counter the effects of a potentially-reduced flow.

Why are locals protesting against a mega dam project in Arunachal Pradesh Course of the Siang

Environmental, social concerns

In the memorandum that three anti-dam organisations — the Siang Indigenous Farmers Forum (SIFF), Dibang Resistance, and North East Human Rights — intended to give Khattar, concerns regarding the project's environmental and social impact are stated.

"Arunachal Pradesh already hosts numerous dams, and our rivers have borne the burden of hydroelectric projects for years. The proposed Siang mega dam threatens our ancestral abode that hosts delicate ecosystems, wildlife habitats, and biodiversity," the memorandum states.

Activists are also concerned about the communities that will be displaced due to the project, which they say will submerge more than 300 villages belonging to the Adi tribe, including the Upper Siang district headquarters of Yingkiang.

"Siang and all the tribal territories of the state [have been the] Ancestral Heritage of our people [for] 1000 of years... generation after generation [has relied] on these rivers for our livelihoods, cultural practices, and sustenance. The proposed dam threatens our way of life," the memorandum says.

SIFF activist Gegong Jijong, resident of Gette, one of the villages which could be impacted by the project, spoke to The Indian Express. "After all the villages in the valley along the Siang are



submerged... where will we go? We can't go further uphill where there is snow and ice... we also have to survive. There will be no farming, no gardens there," he said.

Earlier this year, while campaigning for the Lok Sabha and state assembly elections in Arunachal Pradesh, Chief Minister Pema Khandu acknowledged people's apprehensions about the project, and said that it would go ahead "only with the people's consent."

Renewed push and resistance

Despite Khandu's reassurance, authorities have seemingly hastened their pre-construction activity, in turn increasing the urgency among those resisting it. Senior NHPC officials met with Arunachal Pradesh Deputy Chief Minister Chowna Mein and others in Itanagar on June 25 "regarding early commencement of Siang basin projects".

The Upper Siang district administration has also called multiple meetings this year to lay the ground for a pre-feasibility survey in the area, a preliminary analysis to assess the probable cost of a project and its feasibility in a given area. The NHPC has chosen three sites along the Siang — Uגעng, Dite Dime and Parong — for its feasibility study.

The minutes of one such meeting called last month state that people should cooperate with the government and "allow the taking up of survey works for national interest and area development". The minutes also state that the survey work is "likely to be taken up shortly". This meeting was chaired by the District Collector, and attended by the Superintendent of Police, the local MLA, and representatives of dam-affected villages.

Authorities are in the process of launching a massive public outreach campaign in the district to drum up support for the project. The NHPC has sanctioned a Rs 325 crore CSR package which will be used for the implementation of livelihood schemes, as well as the development of health, education, and sports infrastructure. MoUs for these activities are currently being signed.

"It is a project of major national interest which a section of people is opposing. We are holding public awareness activities to convince them... There are a number of different activities going on, and we are in the middle of enabling surveys for a pre-feasibility survey," Upper Siang DC Hage Lailang said.

Activists, however, are wary of framing the project in national interest terms. They are particularly concerned by a provision of last year's Forest (Conservation) Amendment Act which exempts from clearance the diversion of forest land for strategic projects within 100 km from India's borders.

"The portrayal of the Upper Siang dam as a national security relevance project is problematic, given the history of anti-dam resistance in the region," activist Bhanu Tatak said.

RUSSIA, INDIA AGREE TO SPEED UP DELIVERY OF MILITARY SPARE PARTS

India and Russia have agreed to expedite the delivery of spare parts of Russian-origin military platforms by setting up joint ventures in India among other ways, Foreign Secretary Vinay Kwatra said Tuesday, the Government's first public acknowledgement of a delay in Russian supplies amid the war in Ukraine.



- Most of India's existing military hardware is Russian-origin and needs a regular supply of spares for maintenance. The Ukraine war has also delayed Russia's scheduled deliveries of certain big-ticket weapon systems to India, like the S-400 Triumf surface-to-air missile systems.
- Top Indian military leaders have, however, maintained that the delay in spares or maintenance support have not affected the Armed Forces' operational preparedness.
- A joint statement released Tuesday by the two countries said their defence partnership was reorienting presently to joint research and development, co-development and joint production of advanced defence technology and systems to meet India's quest for self-sufficiency. They confirmed their commitment to maintain the momentum of joint military cooperation activities and expand military delegation exchanges.
- In this regard, the statement added, the two sides agreed on establishing a new Working Group on Technological Cooperation and discussing its provisions during the next meeting of IRIGC-M&MTC (Intergovernmental Commission on Military and Military Technical Cooperation) in Moscow in the second half of 2024.
- Naval platforms such as the Kolkata-class stealth guided missile destroyers, the Shivalik class multirole stealth frigates, the Brahmaputra class frigates, the Kora class corvettes as well as the Army's anti-tank ammunition, upgrade of its licence-built BMP-2 amphibious infantry combat vehicles, the T-90 tanks are among major platforms requiring Russian spares.
- Aside from the S-400 Triumf, two Tushil-class ships are being constructed in Russia, an unspecified number of Smerch Multiple Rocket Launch Systems and rocket projectiles and Russian-made X-31 missiles, among other missiles, and spares for several weapon systems and equipment are being procured from Russia.

For Your Information:

From "India-Russia joint statement: Terror attacks condemned \$100 bn trade target"

- India and Russia issued a joint statement underlining that both the countries have remained resilient in the backdrop of the "prevailing complex, challenging and uncertain geopolitical situation". The statement condemned the terror attacks in Jammu and Kashmir, Dagestan and Moscow and also mentioned setting up a bilateral trade target of USD 100 billion by 2030.
- Aiming to further accelerate and sustain the growth in bilateral trade, the leaders agreed to set the bilateral trade target of USD 100 billion by 2030, it said. The joint statement said they agreed to development of a bilateral settlement system using national currencies and consistent introduction of digital financial instruments into mutual settlements.
- They also agreed to increase "cargo turnover with India through the launch of new routes of the North-South International Transport Corridor, the Northern Sea Route and the Chennai-Vladivostok Sea Line". They also agreed to increase the volume of bilateral trade in agricultural products, food and fertilizers, the statement said.

DRDO UNVEILS COUNTRY'S INDIGENOUS LIGHT TANK ZORAWAR

The tank, unveiled on Saturday, was jointly developed by the Defence Research and Development Organisation (DRDO) along with Larsen & Toubro as the lead integrator. The tank is currently



powered by a Cummins engine, and the DRDO has taken up a project to develop a new engine domestically, officials said.

“It has been developed from the drawing board within the shortest possible time and capable of operation in the most challenging environment on earth: extreme weather and extreme height with minimal logistic support in high-altitude area along the northern border,” a Defence official said.

The first prototype is ready after factory acceptance. Shortly, it will be subjected to internal trials in the field area and thereafter handed over to the users for trials, the source stated.

As part of developmental trials, over the next six months, the tank will be tested in various conditions including summer, winter and high altitude, another source said. “The tank is planned to be handed over to the Army for user trials by August 2025.”

Initially, a German engine was identified as the best suitable to power the light tank. However, its procurement got delayed due to export clearances from Germany. While the German government did approve it, officials said it was too late and was delaying the project. So, the tank was developed with an engine powered by Cummins and the company has agreed to assemble it in India, one of the sources cited above said.

The DRDO has taken up a project to develop a power pack for the light tank as a new 1,400-HP engine is also under development for the Arjun Mk1A main battle tank, sources added.

In April 2021, the Army had issued a Request For Information for the procurement of 350 light tanks weighing less than 25 tonnes in a phased manner, along with performance-based logistics, niche technologies, engineering support package, and other maintenance and training requirements.

Following this, the DRDO and the L&T teamed up to develop a light tank indigenously along with many Micro, Small and Medium Enterprises who have been roped in for various sub-system development to encourage indigenous development of Defence weapon platform through industry.

EXPLAINED: ISRO'S PLANS TO VENTURE INTO PLANETARY DEFENCE

The asteroid Apophis may not pose a threat, but asteroids are headed towards Earth all the time. Once in a while, they may pose threats. The Indian space agency might send its own spacecraft, or collaborate with other space agencies.

Indian Space Research Organisation (ISRO) Chairman S Somanath said last week that “we should be able to go and meet” the asteroid Apophis when it passes by Earth at a distance of 32,000 km in 2029. However, “it is yet to be decided in what way [ISRO] should participate”.

The Indian space agency might send its own spacecraft, or collaborate with other space agencies. A NASA mission has already been confirmed.

Somanath’s remarks reveal ISRO’s intent to develop capabilities in planetary defence — an area it has so far not entered. A mission to study an asteroid would be the first step towards building a programme aimed at preventing celestial bodies from colliding with Earth with potentially catastrophic consequences.



Apophis, an alarming asteroid

When Apophis was discovered in 2004, scientists thought there was a 2.7% chance of a collision with Earth — the highest probability of any large asteroid hitting Earth in the recent past. Initial observations showed that if not in 2029, Apophis could hit Earth in 2036 or 2068.

Given the asteroid's size — it measures about 450 m at its widest — a collision with Earth could cause large-scale damage. Some scientists compared the potential impact to the event that wiped out dinosaurs and most other extant life some 66 million years ago.

Subsequent observations showed these initial fears to have been unfounded — the Earth did not face any risk from Apophis in 2029, 2036, or 2068. The asteroid will come the closest to Earth in 2029, when it flies by at a distance of 32,000 km. This is close enough to be visible to the naked eye, and at a distance at which some communication satellites operate.

Why ISRO wants to venture into planetary defence Objects in space.

What are the possible incoming threats from space?

Apophis may not pose a threat, but asteroids are headed towards Earth all the time.

In fact, thousands enter the Earth's atmosphere every day. Most are very small and burn up in the atmosphere due to friction — some of the larger ones burn spectacularly, and show up as fireballs in the sky. In some cases, unburnt fragments make it to surface, although they are not large enough to cause much damage.

Once in a while, however, asteroids do cause damage. In 2013, a 20-metre wide asteroid entered the atmosphere and exploded about 30 km above a Russian town, releasing energy equivalent to the blast yield of 400-500 kilotons of TNT — 26 to 33 times the energy released by the atom bomb that detonated over Hiroshima. While most of this energy was absorbed by the atmosphere, shock waves travelled to the ground, flattened trees, damaged buildings, and injured 1,491 people, according to the Russian Ministry of Health.

Worryingly, the asteroid was detected only after it entered the atmosphere. This was in part because it came from the direction of the Sun, and was hidden by its glare.

Scientists know of at least 1.3 million asteroids, but there could be more surprises in store. A planetary defence programme seeks to track and neutralise these threats.

From sci-fi to reality

In 2022, NASA demonstrated technology that has long been a science fiction staple.

A spacecraft launched in the previous year crashed into an asteroid named Dimorphos, and changed both its shape and its trajectory. Dimorphos did not pose a threat to Earth, and was circling the Sun some 11 million km away from our planet. But this showed the beginning of a planetary defence programme. Asteroids are yet to be studied in detail, and very few missions have been dedicated to them.

This is why the approach of Apophis has generated huge interest among space agencies around the world. While formal announcements are yet to be made, several missions, including those from private agencies, are expected to be launched in order to study the asteroid from close quarters.



NASA has already redirected one of its spacecraft, one that previously studied the asteroid Benu, to track Apophis. This spacecraft will go within a distance of 4,000 km of Apophis in April 2029, and then trail the asteroid for 18 months, collecting data and analysing its surface.

ISRO's intention to join such an endeavour displays its growing confidence in taking on newer challenges, and contributing proactively to global space objectives. It is also a reaffirmation of its continuing evolution into a well-rounded space agency, with capabilities that match the best in the world.

WHY IS INDIA DRILLING A 6-KM DEEP HOLE IN MAHARASHTRA?

Scientists don't yet have a way to predict when and where an earthquake will occur. We know powerful earthquakes at the boundaries of tectonic plates, which measure more than 7.5 on the Richter scale, are almost certainly associated with a severe loss of infrastructure and life. In the ocean, these geological events trigger tsunamis. However, more minor earthquakes that occur in a plate's interior are more challenging to predict because they occur at the least expected sites and could strike densely populated habitats. This is why scientific deep drilling is an indispensable tool for progress in the earth sciences.

What is scientific deep drilling?

Scientific deep-drilling is the enterprise of strategically digging boreholes to analyse deeper parts of the earth's crust. It offers opportunities and access to study earthquakes and expands our understanding of the planet's history, rock types, energy resources, life forms, climate change patterns, and more.

The Borehole Geophysics Research Laboratory (BGRL) in Karad, Maharashtra, is a specialised institute under the Ministry of Earth Sciences mandated to execute India's sole scientific deep-drilling programme. Under BGRL, the aim is to drill the earth's crust to a depth of 6 km and conduct studies to help expand the understanding of reservoir-triggered earthquakes in the Koyna-Warna region of Maharashtra.

This region has been experiencing frequent earthquakes since the Shivaji Sagar Lake, or the Koyna Dam, was impounded in 1962. BGRL's 3-km-deep pilot borehole in Koyna is complete; the Ministry of Earth Sciences is committed to reaching a depth of 6 km.

Benefits of a deep-drilling mission

Earthquakes are challenging to study. Surface-level observations can't make complete sense of them. The recurrent earthquakes in Koyna are synchronous with the dam's loading and unloading during the monsoon and post-monsoon periods, offering an opportunity to widen our understanding of earthquakes.

However, making observations inside the earth is a different ball game. Scientifically drilled boreholes can be a hub of direct, unique in situ experiments and observations and monitor a region's fault lines and seismic behaviour. They also provide exact and fundamental knowledge of the composition of the earth's crust, structure, and processes, and help validate models based on surface studies. Thus, it can inform a range of societal problems related to geohazards and geo-resources.



Investing in scientific deep-drilling can also help expand scientific know-how and technological innovation, especially in seismology (the study of earthquakes). It can also spur the development of tools and equipment for drilling, observation, data analysis, sensors, etc.

Challenges of scientific deep drilling

Scientific deep drilling is the best tool to study the earth's interior. Other ways include geophysical measurements of seismic wave speed, gravitational and magnetic fields, and electrical conductivity from the near surface. Scientists can also examine crust fragments brought from deep underground to the surface.

But scientific deep-drilling remains the most reliable method because it helps get direct (in situ) and near-source measurements. Researchers can also capture rock and sediment cores aligned with the earth's timeline from within the borehole. It is also labour- and capital-intensive. The earth's interior is a hot, dark, high-pressure region that hinders long and continuous operations.

Even with these challenges, however, scientific pursuits are important. Expanding earth-science research, especially of solid earth, is crucial. Aside from earthquakes, this is because many surface phenomena — the composition of water and air, their availability, and the resulting interactions with climate-affected phenomena — are linked to what happens inside the earth's crust.

What is the drilling technique?

The Koyna pilot borehole is about 0.45 m wide (at the surface) and roughly 3 km deep. It employs a unique drilling strategy — a hybrid of mud rotary drilling and air hammering.

In rotary drilling, a rotating drilling rod made of steel is attached to a diamond-embedded drill bit at the bottom. As it penetrates the crust, it generates considerable heat due to friction, so drilling mud is flushed through the rod into the borehole to cool the drill bit. In addition to being a coolant and a lubricant, the drilling mud helps bring rock cuttings up from the borehole.

The pilot drilling mission was a success and has yielded significant new information about the subsurface geological environment. For one, it revealed 1.2-km thick, 65 million-year-old Deccan trap lava flows, and below them 2,500-2,700-million-year-old granitic basement rocks. Downhole measurements of core samples and conditions from a depth of 3 km have also provided new information about the physical and mechanical properties of rocks, the chemical and isotopic composition of formation fluids and gases, temperature and stress regimes, and fracture orientations.

What next?

The pilot data will inform future drilling. Modelling experiments suggest the temperature at 6 km could be 110-130 degrees C. Drilling equipment, downhole data acquisition systems, and sensors for long-term placement at depth need to be designed accordingly. The Koyna data and samples will also facilitate new experiments. More than 20 research groups nationwide are already studying the Koyna samples. One is examining the gouge from fault zones to understand the frictional properties of rocks in quake-prone regions. Another is characterising microbes on these rocks to understand life forms that thrive in hot, dark, nutrient-poor environments. Their findings could potentially yield new molecules and clues to improve industrial processes.

Members of the international geological research community have also sought access to core samples for projects in emerging fields such as carbon capture and storage in the deep Deccan



traps. In sum, the Koyna exercise is establishing a firm footing in scientific deep-drilling for India. Its lessons will inform future deep-drilling experiments and expand academic knowledge in multiple ways.

HURDLES IN IMPORTING DIAMONDS POSE A QUANTUM BLOCK TO RESEARCH AMBITION

Quantum technology is a broad term applicable to multiple avenues of research. It hinges on being able to exploit the “quantum-mechanical” properties of matter inside the atom and develop entirely new kinds of computers, sensors and encryption systems that, proponents say, will make our existing devices primitive in comparison.

However, this also means that much knowledge on harnessing quantum technology is still being unearthed and requires trained scientists conducting intricate experiments on many things, including diamonds.

While gemologists may be concerned with the cut, clarity, colour and carats of diamonds, quantum researchers are interested in their “defects”. It is the unique arrangement of carbon atoms in a diamond which gives it the properties of hardness, electrical conductivity and manipulation of light. However, the atomic structure of some diamonds sometimes have two missing carbon atoms. They are substituted by a nitrogen atom as well as a “hole” or what is called a “nitrogen-vacancy” centre.

These “centres” are sensitive to the slightest variations in magnetic fields and thereby open vistas of investigation. An electron at such a centre can be individually tweaked and made to behave like a qubit. Qubits — analogous to the bits and bytes of classical computers — are the logic states of quantum computers and in theory allow calculations, beyond the capacity of existing supercomputers, to be done in a trice.

Researchers can also use lasers at room temperatures to manipulate these centres. However, unlike the diamonds in jewellery shops, scientists prefer their diamonds grown in a lab, customised with the ‘defects’ of their choice.

In the Union Budget 2023, Finance Minister Nirmala Sitharaman announced a scheme to promote research and development of lab-grown diamonds. India, despite being a formidable industry in cutting and polishing diamonds, has only just begun manufacturing them. Indian diamantaires are not yet equipped to make diamonds with quantum-research-ready “defects”. And this is a problem for scientists.

The Science and Technology Ministry has announced plans to make quantum computers of 50 to 1,000 qubits by the decade-end. But, quantum computers globally are far from being useful devices because maintaining electrons — like in the ‘defect diamonds’ — in their qubit like states is a daunting challenge.

CRASH COURSE

On July 10, in Uttar Pradesh, a private double-decker bus collided with a milk tanker, killing 18 people. Local reports claimed the bus’s insurance had not been renewed and that it lacked an alarm system to alert the driver if > bus drifted from its lane, among other issues. Should the State government’s inquiry bear these details out, they will highlight the importance of the multidimensional nature of road safety, which banks on road and highway design, presence of roadside businesses, speed and access control, and visibility, among other factors, to protect lives.

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



The details should also highlight the reluctance of municipal authorities and local bodies to scrutinise public and licensed private infrastructure until lives are lost. According to the National Crime Records Bureau, 1.71 lakh people died and 4.23 lakh were injured in 4.46 lakh road accidents in 2022. A 2023 IIT Delhi report estimated there were 11.3 road-accident deaths per lakh population in 2021, which, after accounting for official data inconsistencies and underreporting, is constitutive of a public health crisis. Speed control is particularly important: it is implicated in most deadly road accidents in the country. Following the bus accident, police also told news agencies the collision had flung passengers out of the bus. Public officials know how to control speed in urban and rural areas — with strategically placed speed-breakers and roundabouts and increased police monitoring, for example. Similarly, it should be clear which portions of the Automotive Industry Standards that the bus's condition at the time of the accident violated.

There are three ways forward. First, local authorities must enforce existing standards and have skilled personnel and proper equipment for this purpose. They must also be allowed to impose harsher penalties on transport service operators who fail to meet safety requirements. Municipal bodies must also be prevented from diluting standards painstakingly specified by engineers in order to, say, facilitate local businesses. Second, the Ministry of Road Transport and Highways needs to collect and publish better, ideally complete, data on vehicle registrations, safety certificates, testing centres, criteria, and reports and audits. It also needs to improve the quality of data about injuries and deaths, both of which remain undercounted. Finally, there is a need for greater public awareness of how the health of transport vehicles is ascertained and for access to each vehicle's latest test report. This may be a bridge too far given both the generally complacent attitude towards quality control and unscrupulous operators' ability to escape sanction — but it remains the bridge that will have to be crossed.

PROPOSAL TO INTRODUCE MANUSMRITI IN LLB COURSE CAUSES UPROAR, DU V-C SAYS READINGS WILL BE REMOVED

Following the uproar by a section of Delhi University teachers over a proposal by the Faculty of Law to introduce the ancient Sanskrit text Manusmriti in its undergraduate programme as a suggested reading, Vice-Chancellor Yogesh Singh Thursday stated the readings on this particular topic would be removed from the proposal before presenting it to the Academic Council.

Speaking to The Indian Express, Singh said, "The varsity held a review meeting today around 2 pm and rejected the inclusion of the suggested readings on Manusmriti in the Jurisprudence (Legal Method) paper, by the Faculty of Law, before it will be tabled in the AC meeting tomorrow."

The revised syllabus document was to be placed before DU's Academic Council for Academic Matters Friday to pass its implementation for the upcoming academic session in August.

Manusmriti with the Manubhasya of Medhatithi by G N Jha and Commentary of Manu Smriti-Smritichandrika by T Krishnaswami Iyer were proposed as suggested readings under Unit V-Analytical Positivism of the undergraduate course paper in Bachelor of Laws (LLB) in Semester 1.

Speaking to The Indian Express, Professor Anju Vali Tikoo, Dean, Faculty of Law, had said earlier in the day, "The Manusmriti has been introduced in line with the NEP (National Education Policy) 2020 to introduce Indian perspectives into learning. The unit under which it has been introduced in itself is an analytical unit. Hence, to bring in more perspective for the student to compare and understand analytical positivism, this step has been taken."



Protesting the move, the Social Democratic Teachers Front had written to the V-C on Wednesday stating, "... it has come to our knowledge that Manusmriti has been recommended to students as 'suggested readings' which is highly objectionable as this text is adverse to the progress and education of women and marginalised communities... Introduction of any section or part of Manusmriti is against the basic structure of our Constitution and principles of Indian Constitution."

Referring to the commentary in the syllabi's suggested readings, DU AC member Maya John had said the modifications in both Jurisprudence papers are politically motivated as they lack academic merit.

The Congress also attacked the Centre over the proposal. Reacting to the development, Congress general secretary, in-charge communications, Jairam Ramesh said this is "all part of the salami tactics of the non-biological PM to bring fulfilment to the decades-long attempt by the RSS to assault the Constitution and Dr. Ambedkar's legacy".

Meanwhile, the Faculty of Law is in the process of adding three new courses on the new criminal laws that came into effect on July 1. The courses on the Indian Penal Code, 1860, Code of Criminal Procedure (CrPC), and Indian Evidence Act, 1872, will be replaced with those on the Bharatiya Nyaya Sanhita, Bharatiya Nagrik Suraksha Sanhitha, and Bharatiya Sakshya Adhinyam.

The new courses were drafted by the Law Faculty's Committee of Courses last month and approved by the Standing Committee on Academic Matters on June 24.

WHY NEET DOES NOT WORK

Since its inception about a decade ago, the National Eligibility cum Entrance Test (NEET) has been a politically contentious issue in Tamil Nadu. The recent turn of events has made it a national issue.

— "This year, more than 24 lakh candidates sat for the NEET after paying application fees ranging between Rs 1,000 to Rs 1,700. The application charges alone give a revenue of about Rs 337 crore to the testing agency... This makes the MBBS dream virtually unattainable for students of the economically weak strata, despite scoring high marks in NEET."

— This low entry requirement can undermine the importance of excelling in high school. This, in turn, lowers the standard of school education. The state government and their education ministries do not have any say in the selection process of future doctors in their states.

— Tamil Nadu has conducted several experiments in the entrance system to professional courses, starting from an interview system in the 1970s to the entrance examinations in 1983 along with 2/3rd weightage to marks in concerned subjects in the higher secondary education exam.

— Following recommendations from the Anandkrishnan Committee, the state abolished entrance exams and conducted admissions to medical and engineering colleges solely on the basis of higher secondary marks.

— Even after the introduction of NEET, the government ensured social equality and inclusivity, to an extent, by providing reservation to government school students as per the recommendations of P Kalaiyaran and AK Rajan committees.



— Tamil Nadu's experiences over five decades demonstrate that factors such as infrastructure, faculty numbers, and the extent of patient care services determine the quality of young doctors.

— NEET needs to be reevaluated. Public health is a state subject and education is part of the concurrent list. All states need to be taken into confidence, before framing the admissions processes, especially in institutions controlled by the state government. The debate on NEET touches on broader issues such as educational equity and federalism.

— If NEET is riddled with problems, what are the alternatives? Instead of a single cross-sectional assessment, a summative assessment over two to three years of performance in school education along with a general aptitude test might improve the selection process...

— The primary objective of refining the medical entrance process is to ensure that students with high average marks gain admission not only to government-run medical colleges... The goal should be to ensure that people from disadvantaged sections are adequately represented in the medical field and they can contribute to making healthcare accessible to their communities.

For Your Information:

— Tamil Nadu has always been opposed to the NEET exam as it was against their perfectly functioning state policy of linking medical college admissions to high school performance. In 2021, Tamil Nadu constituted an Expert Committee headed by Justice A K Rajan. The Rajan Committee brought out startling evidence, showing how rural students from Tamil medium schools lost out heavily in clearing the NEET — between 2017-21, from an average of 15 per cent admissions of Tamil-medium students, the number had fallen to 1.6-3.2 per cent.

— Clearly, NEET disadvantaged rural and poorer students. Tamil Nadu was particularly affected as its sound public health system rested on students from rural backgrounds willing to work in primary health centres without ambitions of migrating abroad.

HOW TO MANAGE 'BRAIN-EATING AMOEBA' CASES

The story so far:

There have been four cases, including three deaths, of the rare, but fatal primary amoebic meningoencephalitis (PAM) in Kerala in the last two months. A 14-year-old boy from Thikkodi in Kozhikode district tested positive for the infection on July 5. He is undergoing medical treatment now and his condition is reported to be stable.

Where have the fatalities occurred?

There have been three deaths so far — E.P. Mridul, 12, from Feroke in Kozhikode district, died at a private hospital in Kozhikode city on July 3. V. Dakshina, 13, of Kannur, succumbed to it at a private hospital in the city on June 12. Fadva, 5, of Munniyur in Malappuram, died at the Government Medical College Hospital, Kozhikode, on May 20.

What is PAM?

Primary amoebic meningoencephalitis or PAM is caused by *Naegleria fowleri*, an amoeba that thrives in warm freshwater lakes, ponds and rivers. It can also survive in poorly maintained swimming pools in rare cases. As it can infect the brain and destroy the tissues there, this one-celled organism is also called 'brain-eating amoeba'. These infections, though rare, are fatal and



97% of the patients don't survive. The infection happens when people go for a swim in lakes, ponds or rivers, during the summer. Experts say that it could occur if the atmospheric temperature is high and water levels are low. The amoeba enters the body through the nose and reaches the brain. It destroys brain tissues and causes their swelling. In recent cases, children have been found to be more vulnerable to it. The infection does not spread from people to people. Swallowing water containing the amoeba does not lead to it either.

What are the symptoms of PAM?

According to the Centers for Disease Control and Prevention (CDC) in the U.S., headache, fever, nausea, and vomiting are its early symptoms. The disease, however, can progress rapidly. Stiff neck, confusion, lack of attention to people and surroundings, loss of balance, and hallucinations are the later symptoms. It usually leads to coma and death after five days, says the CDC. Most people die within one to 18 days.

Experts point out that warming of the atmosphere and stagnant and unhygienic water resources could be some of the conditions leading to the infection. This type of amoeba is found to be more active in warm water.

How is it diagnosed and treated?

The infection can be diagnosed through PCR tests of the cerebrospinal fluid. However, as PAM is a rare condition, detection can sometimes be hard. In Kozhikode, doctors at the Government Medical College Hospital suspected its possibility in the five-year-old girl from Malappuram after she exhibited symptoms similar to that of bacterial meningitis, whose instances have come down in recent times, mainly due to vaccination. There are no standard treatment methods available and the doctors are following the guidelines of the CDC for now. According to sources, the State Health department has procured miltefosine, a broad-spectrum anti-microbial drug, from Germany for the treatment of infected persons. Paediatricians say that Azithromycin and Amphotericin B, some of the other medicines suggested, are available.

Has it been reported in Kerala before?

First detected in the Alappuzha municipality in 2016, it was reported in Malappuram in 2019 and 2020, Kozhikode in 2020, Thrissur in 2022, and again in Alappuzha in 2023. Health Minister Veena George convened a meeting on July 1 to take stock of the situation and it was decided to formulate special guidelines for the treatment.

Health officials have said that there is a chance of the amoeba entering the brain through the holes in a layer that separates the nose and the brain or through possible holes in the ear drum. So, children having infections in their ear have been advised against taking baths in ponds or in stagnated water resources. Diving too should be avoided. Those running water theme parks and swimming pools have been asked to chlorinate the water there at regular intervals. Kerala Chief Minister Pinarayi Vijayan convened another meeting on July 5 and issued directions to keep water resources clean. Children have been asked to use swimming nose clips to prevent the infection.

What can be done to reduce the risk?

Holding the nose or wearing a nose clip while jumping or diving into fresh water are some of the steps suggested to avoid the infection. The head should be kept high while entering warm water. Steer clear from digging in shallow waters, say experts. Distilled or boiled water should be used for clearing nasal passages.



CENTRE ASKS STATES TO RAISE AWARENESS OF CADAVER DONATIONS

Amid a shortage of cadavers for academic and research purposes at medical colleges across the country, the Union Health Ministry has appealed to the States and Union Territories to encourage donation of bodies in the event of deaths happening outside hospitals.

In a note to the Health Secretaries, the Director-General of Health Services, Atul Goel, said the Union government was committed to promoting and augmenting organ donation to save the lives of those with organ failures. In most of the cases, organ donation was feasible only from patients certified as brain stem dead (before the heart stops).

On many occasions, it was noted that organ donations were not possible in situations where deaths happened outside the hospital, cardiac deaths occurring before the patient got admitted to the intensive care unit, and deaths before the completion of brain stem death certification.

Body donation possible

In such situations and also in deaths happening at home, body donation is possible. "The donated human bodies are required for academic and research purposes, which aids in better teaching of medical professionals. We have a shortage of human cadavers required for teaching in the country," Professor Goel said.

Asking the State Health Secretaries to instruct the stakeholders accordingly, he said in scenarios where organ donation was not possible, the option of body donation could be explored and family members encouraged and facilitated for the same. "This will go a long way in offsetting the shortage of human cadavers in medical institutions." In a separate communication, the Health Ministry informed that as part of the Indian Organ Donation Day on August 3, it had been decided to organise a public awareness campaign in the name of Angdaan Jan Jagrukta Abhiyaan.

"One organ donor can save up to eight or nine lives," Union Health Secretary Apurva Chandra said.

WHY ARE DENGUE CASES ON THE RISE WORLDWIDE?

The story so far:

Dengue cases have surged in India, with Karnataka, Kerala, and Tamil Nadu seeing significant increases. According to data published by the National Centre for Vector Borne Diseases Control, as of April 30, India recorded 19,447 cases and 16 deaths, with Kerala and Tamil Nadu leading in numbers. Karnataka, initially reporting 2,503 cases, has now recorded 7,840 cases and seven deaths as of July 10, with 293 new cases reported on that day alone.

What is the global situation of dengue?

According to the World Health Organization (WHO), as of April 30, over 7.6 million cases of dengue were reported in 2024. This included 3.4 million confirmed cases, over 16,000 severe cases and over 3,000 deaths. In an update on the global scenario on May 30, it said that 90 countries have known active dengue transmission, adding that "not all of which have been captured in formal reporting".

The WHO noted that at least five countries, including India, were grappling with the onset of monsoon season, which created suitable conditions for the breeding and survival of Aedes



mosquito. Urbanisation and population movements have also played a pivotal role in the increasing burden in the region.

Dengue is endemic in more than 100 countries in the WHO regions of Africa, the Americas, the Eastern Mediterranean, South-East Asia and Western Pacific. The Americas, South-East Asia and Western Pacific regions were the most seriously affected, with Asia accounting for around 70% of the global disease burden. However, it also noted that dengue is spreading to new areas in Europe, the Eastern Mediterranean and South America.

How does dengue spread and how is it treated?

Dengue virus is transmitted to humans through the bite of infected mosquitoes, with the primary vector that transmits the disease being *Aedes aegypti*. While cases are mostly asymptomatic or mild, some may develop severe dengue that could include shock, severe bleeding or organ impairment. According to the National Guidelines for Clinical Management of Dengue Fever, dengue presents as an acute febrile illness lasting two to seven days, characterised by symptoms such as headache, retro-orbital pain, myalgia, arthralgia, rash, and hemorrhagic manifestations. In those without any warning signs or complications, dengue is managed through symptomatic and supportive treatment.

The infection has spread to all geographic regions due to rapid increase in urbanisation, expanding travel patterns and climatic changes. Tamil Nadu has witnessed outbreaks of dengue infection once every five years in the past decade with the last outbreak occurring in 2017.

WHY KARNATAKA IS CRACKING DOWN ON VENDORS OF PANI PURI AND GOBI MANCHURIAN

The statewide crackdown is against the use of artificial food colouring, and other cancer-causing agents by food business operators (FBOs). In the past five months, 4,000 food samples have been collected for testing by the food safety department following reports of FBOs' unhygienic practices leading to health disorders.

Action after complaints

Srinivas K, Commissioner of Karnataka's Food Safety and Standards Commissionerate, said they had received multiple complaints of vomiting, diarrhoea, and other health complications after consuming certain food items.

As a result, the department decided to take action against the use of artificial colouring agents. Since March, it has issued three orders banning the use of such agents in food items such as gobi manchurian, cotton candy, and chicken kababs.

The latest ban came earlier in July after the department found carcinogenic agents (they can potentially cause cancer) and bacteria harmful to human health in the samples of pani puri and shawarma.

Harmful colouring agents

The samples tested by the food safety department revealed that the food items contained artificial colouring agents such as Tartrazine, Sunset Yellow, Rhodamine B, and Brilliant Blue. These agents can cause cancer or lead to diabetes, kidney failure, and other complications, according to food safety department officials. In fact, Rhodamine B — used to give a red colour — is generally used

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



as a synthetic dye to add colour to a wide range of materials such as textiles. Exposure to the dye may damage the eye and irritate the respiratory tract.

Legal action against FBOs

To take legal action against an FBO selling unsafe food items, the food safety department has to collect two kinds of samples — a survey sample and a legal sample. It first collects and tests a survey sample from an FBO. If this sample is found to be unsafe, four more samples (known as legal samples) are collected from the FBO concerned, and then sent to Central Food Technological Research Institute (CFTRI) for further testing. If the CFTRI report also deems the sample unfit for human consumption, the FBO is booked under the Food Safety Act.

The FBO is tried at a court of Judicial Magistrate of First Class (JMFC). If the FBO is found guilty, a fine of up to Rs 10 lakh and imprisonment for seven years can be awarded.

So far, 284 FBOs in Karnataka for selling unsafe food items under the Food Safety Act.

KAZIRANGA'S WOMEN FOREST GUARDS ENSURE A SAFE PASSAGE FOR FLOOD-HIT ANIMALS BY PATROLLING HIGHWAY

The 1,307.49 sq. km tiger reserve, considered the world's safest address for the one-horned rhino, recorded the highest level of flood — 87.47 metres — in a decade on July 1 this year. The flood this year killed 174 animals, two of which died after speeding vehicles hit them on National Highway 715.

The highway stretches for about 60 km along the southern edge of Kaziranga National Park. During floods, the animals flee to the hills of the Karbi Anglong district on the other side of the park. Speed guns and cameras are installed at some of the nine animal corridors on this highway where vehicles are not allowed to move at speeds beyond 40 km per hour.

"Kaziranga has 108 women forest guards and foresters 1 (equivalent to sub-inspector) posted since September 2023. While they are well trained, they have been engaged in active flood management and patrolling of the highway to regulate the traffic and ensure the safety of the animals," the park's Director, Sonali Ghosh, told The Hindu.

The team of women forest frontline staff, including four with the Special Rhino Protection Force, was named Van Durga by Prime Minister Narendra Modi in March.

Test of survival

Forest officials said the annual floods, necessary for Kaziranga's landscape, are a test of the survival of the fittest animals. "Many animals drown but their death due to vehicle hits while crossing the highway is unacceptable, and we put in a lot of effort to avoid such cases," a frontline forest worker said.

AI COMES TO THE RESCUE OF ELEPHANTS

The elephant population in India stands at 25,000 to 30,000, earning the species an "endangered" status. Their range today is estimated to be only 3.5% of what it was earlier, being restricted to the Himalayan foothills, the northeast, some forests of central India, and hilly forests of Western and Eastern Ghats.



Of particular concern is the fragmentation of their habitat: small, forested areas providing sustenance for elephants, interspersed with human-developed landscapes. Fragmentation can also lead to restricted breeding choices. This creates genetic bottlenecks and, in the long term, a reduction in the fitness of the herds.

Frequent movement of elephants between their habitable zones brings them into contact with roads and railway lines. The range of a female elephant covers about 500 sq. km, and traveling over so much distance in the age of fragmented habitats makes a road or railway crossing very likely.

Fortunately, not all elephant tracks pose these hazards. The elephants of Bandipur, Mudumalai and Wayanad go on a seasonal summer migration. They head for the Kabini Dam backwaters for both water and green grass. Studies have identified that 18 elephant routes exist between Tamil Nadu and Kerala.

Wildlife corridors are a solution—these managed lands allow for migration with minimal human contact. One good example is the Motichur-Chilla corridor in Uttarakhand, which allows the flow of elephant genes between the Corbett and the Rajaji National Parks. However, there is always the risk of conflict with humans, with elephants occasionally feasting on crops, or crossing roads and railway tracks.

Train speed

In a Canadian study attempting to mitigate animal-train collisions, train-triggered warning systems comprising flashing lights and bell sounds were installed at various locations along the tracks. These signals, activated 30 seconds before train arrival, were aimed at conditioning animals to associate the warnings with approaching trains.

Cameras recorded animal responses to trains with and without warning signals, on both straight and curved tracks. Large animals, such as elks (from the deer family) and grizzly bears left the tracks about 10 seconds before the train arrived when there was no warning system, and about 17 seconds before the train arrived when warning bells and lights were deployed (Transportation Research, vol 87, 2020).

The response to an approaching train is less in curved sections of the track, probably due to reduced visibility. In such places, sound is used by animals. However, the ability to hear an approaching train is significantly influenced by factors such as high train speed.

AI methods

When should an engine driver reduce speed when passing through forests that are elephant habitats? The Indian Railways has a vast network of optical fiber cables. These support telecommunications and carry data, and importantly transmit signals for train control. In a recently introduced system called Gajraj, geophonic sensors on these OFC lines are tuned to pick up the vibrations of the deep and resonant footsteps of passing elephants.

This AI-based intrusion detection system analyses data from the sensors, extracting relevant features such as frequency components and duration of vibration. If elephant-specific vibrations are detected, an alert is promptly sent to locomotive drivers in the area, and train speeds are reduced. The system is now operational in the Alipurduar area of north West Bengal, which has been the site of several tragic accidents in the past.



BUSINESS & ECONOMICS

\$100-BILLION FDI PLEDGE BY EFTA: GOYAL TO VISIT SWITZERLAND SOON

Commerce and industry minister Piyush Goyal will visit Switzerland to take forward a \$ 100 billion investment commitment for India made by the four-nation European Free Trade Association (EFTA) under a bilateral free trade agreement (FTA). In the FTA that India signed in March with EFTA – which apart from Switzerland includes Norway, Iceland, Liechtenstein – India secured the investment pledge from EFTA over next 15 years in return for tariff concessions to the members of the grouping.

— The fineprint of the FTA document shows that of the \$ 100 billion investment, \$ 50 billion will flow in the first 10 years and \$ 50 billion in another five years. These investments will come as foreign direct investment (FDI) and not portfolio investments that should generate 1 million direct jobs, Goyal said at the National Executive Committee meeting of FICCI.

— So far the members of the grouping have collectively invested \$ 10.7 billion in India of which \$ 9.96 billion has come from Switzerland alone. Bilateral trade between India and EFTA stood at \$ 23.9 billion last financial year.

GST SYSTEM REFORMS PANEL REJIGGED

The Goods and Services Tax (GST) Council has reconstituted a ministerial group tasked with identifying possible sources of revenue evasion, improving coordination between central and State GST authorities, and reviewing the IT systems in place for implementing the indirect tax.

These changes have been effected in order to bring in new ministers from the States of Andhra Pradesh, Odisha, and Chhattisgarh where new governments have been installed in recent months, as well as to replace the representative from Haryana. The reconstitution of this key GST panel comes soon after the Council reformulated the ministerial group tasked with recommending a rationalisation of the GST rate structure and its tax rates. The panel, originally headed by former Karnataka CM Basavaraj Bommai, is now headed by Bihar Deputy CM Samrat Chaudhary.

The Council, which met in late June after an almost nine-month hiatus, plans to take stock of the progress made by this GoM so far, and discuss the roadmap for the much-awaited GST rate restructuring exercise in its next meeting that is expected to be held in August.

Formed in late 2021 after the Council decided to dovetail two separate Groups of Ministers (GoMs) dealing with IT challenges and revenue mobilisation, the GoM on GST system reforms was rejigged for the fourth time on Thursday. Odisha is now represented by deputy CM Kanak Vardhan Singh Deo, following the Biju Janata Dal's defeat in recent Assembly polls. AP Finance Minister Payyavula Keshav replaces his predecessor Buggana Rajendranath, after the TDP's resounding victory in State polls.

CAN THE UBER-RICH WORLDWIDE BE TAXED BETTER?

The story so far:

French economist Gabriel Zucman has in a recent report commissioned by Brazil's G-20 presidency recommended an annual 2% tax on individuals holding wealth exceeding \$1 billion.



Finance Ministers of the G-20 group are set to meet in Rio de Janeiro on July 25-26, and the proposal is expected to be discussed at the meeting.

What exactly is the proposal?

Mr. Zucman, an economist who has extensively researched the accumulation, distribution and taxation of global income and wealth, has proposed the adoption of an internationally coordinated minimum tax standard for ensuring effective taxation of ultra-high-net-worth individuals. This he argues would be the basic requirement to safeguard global tax progressivity. At the minimum, he recommends that individuals possessing more than \$1 billion in total wealth (assets, equity shares in both listed and unlisted companies, other ownership structures that enable participating in companies' ownership, etc.) would be required to pay a minimum amount of tax annually that would be equal to 2% of their wealth.

Such a minimum tax on billionaires could potentially raise \$200-\$250 billion a year globally from about 3,000 individuals, and were it to be extended to cover those with a net worth exceeding \$100 million, would add \$100-\$140 billion annually in global tax revenue.

What is the rationale for such a tax?

As per a key finding of the Global Tax Evasion Report 2024, prepared by researchers at the EU Tax Observatory, global billionaires benefit from very low effective tax rates, which range between 0% and 0.5% of their wealth. "When expressed as a fraction of income and considering all taxes paid at all levels of government (including corporate taxes, consumption taxes, payroll taxes, etc.), the effective tax rates of billionaires appear significantly lower than those of all other groups of the population," the researchers write.

Mr. Zucman in his report to the G-20 presidency posits that the wealth of the top 0.0001% households, expressed as a fraction of world GDP, has surged more than fourfold since the mid-1980s. "In 1987, the top 0.0001% owned the equivalent of 3% of world GDP in wealth. This wealth gradually rose to 8% of world GDP on the eve of the global financial crisis of 2008-2009. It briefly fell during the crisis, and then rose fast to exceed 13% of world GDP in 2024." The average annual growth rate of this population group's wealth is 7.1% net of inflation. In contrast, over the same almost four-decade period, the average income of an adult grew annually by 1.3% net of inflation, and average wealth increased by 3.2% a year.

"As long as ultra-high-net-worth individuals keep having higher net-of-tax returns than the rest of the population, their share of global wealth will keep rising — an unsustainable path," argues Mr. Zucman. Emphasising that "progressive taxation is a key pillar of democratic societies" that helps strengthen social cohesion and trust in governments to work for the common good, the French economist stresses that it is needed to help fund public goods and services. Better tax revenues are also crucial to meet the investments required to address the climate crisis.

Why moot such a tax now?

The French economist cites research that shows contemporary tax systems worldwide are not effectively taxing the wealthiest individuals. As a result ultra-high-net-worth individuals tend to pay less in tax relative to their income than other social groups, regardless of the specific tax design choices and enforcement practices of countries. Income taxes, which in principle constitute the main instrument of progressive taxation, fail to effectively tax ultra-high-net-worth individuals. This in turn deprives governments of substantial tax revenues and contributes to



concentrating the gains of globalisation into relatively few hands, undermining the social sustainability of economic globalisation, he argues.

Also, the global social and political environment, and in some ways the regulatory climate too, are more conducive now to successfully implement such a proposal. He specifically cites the progress made in curtailing bank secrecy over the last 15 years through increased information exchange between countries, which according to the EU Tax Observatory has led to a decline in offshore tax evasion by an estimated factor of about three in less than 10 years.

The other major enabling factor is the 'historic decision' in 2021, when more than 130 countries and territories agreed to a common minimum corporate tax of 15% for large multinational companies (MNCs). The willingness on the part of countries worldwide to tax MNCs in a manner so as to prevent them from seeking to operate out of low or zero tax jurisdictions is, in the French economist's opinion, a template that can be built upon now for taxing billionaires.

How much support does the proposal have?

Brazil, Latin America's largest economy, is the main backer. France, Spain, Colombia, Belgium, the African Union and South Africa, which will assume the G-20 presidency next year, have also backed the idea.

Also, while U.S. Treasury Secretary Janet Yellen is reported to have said the U.S. could not support a global wealth levy, Mr. Zucman has cited President Joe Biden's proposed minimum income tax targeting individuals with more than \$100 million in wealth as yet another approach to tax the uber-rich.

What is its relevance to India?

India has seen a disproportionately sharper increase in wealth at the top of the pyramid over the nine-year period to 2023, according to a study titled 'Income and Wealth Inequality in India, 1922-2023: The Rise of the Billionaire Raj' by Nitin Kumar Bharti, Lucas Chancel, Thomas Piketty and Anmol Somanchi. The authors of this working paper posit that "by 2022-23, top 1% income and wealth shares (22.6% and 40.1%) are at their highest historical levels and India's top 1% income share is among the very highest in the world". The authors of this study on inequality go on to suggest: "a 'super tax' on the very wealthy might be a good place to start. Not only would it serve as a tool for fighting the growing inequalities we are observing today, but it would also provide additional fiscal space for the Indian government to enhance spending on essential social expenditures (health, education, nutrition) which have historically been low compared to global standards, including other countries at similar income levels".

"A tax of just 2% on the total net wealth of the 162 wealthiest Indian families in 2022 would yield revenue to the tune of 0.5% of national income (more than twice the central government's budget expenditures on the National Rural Employment Guarantee Act in recent years)," they add.

ON REDUCING TARIFFS FOR SMARTPHONE COMPONENTS

The story so far:

The Indian Cellular and Electronics Association (ICEA), an industry body representing mobile and other electronics assembly and manufacturing units, has called for a reduction of tariffs on certain components for smartphones. The demand appears, at first blush, to be at odds with the goal of



the government — and domestic players — to expand the domestic industrial base for components. However, the ICEA, whose members have included Apple and Foxconn, has argued that it opposes tariff cuts for components that are widely manufactured in India, such as open cells and LED light parts.

Why impose tariff cuts?

Reducing input costs for smartphone assembly units is the obvious reason for these demands. However, a principal justification makers cite for reduced tariffs on components is the saturation of the domestic market: nearly every phone made in India is assembled domestically, and the surplus is exported. By units, smartphones were the fifth largest classifiable commodity exported in the financial year 2022–23, compared to 2015–16, when the rank was 178. The implication goes, now that domestic demand is fulfilled, the need for high component tariffs has dimmed.

The second justification, the industry cites, is the nature of the specific components that it is seeking duty cuts for: Printed Circuit Boards (PCBs) and sub-assemblies, which are highly complex, and miniaturised inputs for smartphones, are not close to being made in India, increasing costs for local assembly operations. Domestic manufacturing of these components' could take around eight years, Pankaj Mohindroo, ICEA's president estimated.

In addition, the ICEA said in a report last year, "the overall aggregate demand necessary for domestic investment in some inputs is much larger than the demand created by the prevailing production level." This effectively means that current tariff levels on PCBs (20%) and other inputs are not resulting in increased domestic production of these components; rather, they are increasing the costs of assembly, as the components have to be assembled anyway.

The tariffs are also leading to a strange consequence: domestic component makers are jacking up prices they quote to assembly units to a "just noticeable difference" below the net cost of an imported component. Cutting tariffs would force domestic component makers to cut their prices and relieve operating expense pressure for assembly units.

What about foreign competitors?

The industry is casting these proposed changes as a "competitive re-alignment" to keep up with other main electronics manufacturing giants in China, Vietnam, Thailand and Mexico. Vietnam's "bonded zones," which have special exemptions on duties, allow assembly and manufacturing units based there to enjoy much lower tariffs on component imports. "If Indian companies such as Micromax and Lava want their phone to be competitive in the global market, they should not think of import substitution when selecting parts and components," ICEA argues. "They should use the best available technologies to make their phones, regardless of the fact the technologies are made in India or not."

"When China started to assemble smartphones 15 years ago, Chinese firms' only contribution was labour intensive assembly, accounting for about 3.6% of the total manufacturing value addition," the ICEA report says. "But, today, Chinese firms have captured about 25 per cent of the manufacturing value added by providing battery, camera filter, glass back-cover, stainless frame, printed circuit board assembly, and other parts, which are technology intensive and offer higher value added than pure assembly service," the ICEA points out. "[T]here is a need to scale up production of smartphones. At this stage this can only be done by increasing exports. To increase exports, smartphones have to be competitive vis a vis China and Vietnam. This would require reducing tariffs and most importantly maintaining a stability in the tariff regime."



Smartphone assembly units have been buoyed by the production linked incentive scheme for mobile manufacturing, which subsidises phones which are domestically assembled.

WHAT DOES KARNATAKA BILL PROMISE GIG WORKERS?

The story so far:

On June 29, the Karnataka government published the draft of the Karnataka Platform-based Gig Workers (Social Security and Welfare) Bill, making it the second Indian State to initiate such a move, the first being Rajasthan.

What does the Bill seek to do?

The Bill seeks to regulate the social security and welfare of platform-based gig workers in the State and is expected to be placed in the monsoon session of the Assembly.

The draft defines a gig worker as “a person who performs a work or participates in a work arrangement that results in a given rate of payment, based on terms and conditions laid down in such a contract and includes all piece-rate work, and whose work is sourced through a platform, in the services specified in Schedule-1.” A 2022 NITI Aayog report estimates that India will have 23.5 million gig workers by 2029-30. Around two lakh gig workers work with platforms such as Swiggy, Zomato, Uber, Ola, Urban Company, Porter, Dunzo, Amazon, Flipkart and so on in Bengaluru alone reportedly. The last two decades have seen the rise of several such platforms shaping the gig economy in India and impacting the labour market in a big way.

Veering away from traditional employer-employee relationships, the aggregators do not onboard gig workers as their employees, but as ‘partners’ (or other similar terminologies). This essentially makes the workers independent contractors and leaves them outside the security net of labour protection laws. Although initially thought of as a great opportunity to make money while enjoying autonomy and flexibility, over the years workers started seeing reduced payments, arbitrary dismissals and other instances of exploitation in the absence of regulatory laws.

What are some of the highlights of the Bill?

Introduced as a ‘rights-based bill’, the Karnataka draft Bill seeks to protect the rights of platform-based gig workers and places obligations on aggregators in relation to social security, occupational health and safety of workers. The new draft aims to introduce safeguards against unfair dismissals, bring in a two-level grievance redressal mechanism for workers, and more transparency with regards to the automated monitoring and decision-making systems deployed by platforms.

According to the draft Bill, the contract between the aggregator and the worker should contain an exhaustive list of grounds on which the contract would be terminated by the aggregator. It also stipulates that the aggregator shall not terminate a worker without giving valid reasons in writing and prior notice of 14 days.

Why is this important?

Arbitrary terminations have been a major complaint raised by gig workers for many years now. Instances of blacklisting workers or terminating them from work without hearing out their side have been aplenty. Often, platforms enact these through automated monitoring and decision-making systems which track the work and earnings of the gig worker, record customer feedback,



and make decisions accordingly. Workers point out that this system is heavily skewed in favour of the customer and makes it a game of chasing ratings and pleasing the customer at any cost. The absence of human intervention leaves no room for grievance redressal for the latter.

What are the other features of the draft?

Given that arbitrary deductions from payments have been another point raised by workers, the draft mandates aggregators to make payments at least every week and to inform the worker about the reasons for payment deductions if any. As per the new draft, a worker will have the right to refuse a specified number of gigs per week with 'reasonable cause' without any adverse consequences.

Taking a leaf out of the Rajasthan Bill, the new draft also seeks to establish a welfare board and a social security and welfare fund for gig workers. A welfare fee would be levied either on every transaction between the worker and the aggregator or on the overall turnover of the company. The welfare fee as well as contributions from Union and State governments would go to the fund. All gig workers must be registered and the aggregators should furnish to the government the database of gig workers. Contracts must be written in a simple language and any change should be notified to the worker at least 14 days before the proposed change. The gig worker will have the option to terminate the contract accordingly without any adverse consequences for their existing entitlements. The aggregator must also provide reasonable and safe working conditions for workers, although the draft does not delve into what constitutes as 'reasonable.'

Have there been initiatives in other States?

Around a year back, Rajasthan introduced the Rajasthan Platform Based Gig Workers (Registration and Welfare) Bill, making it the first-ever State to do so. The Bill that was introduced by the Congress government became an Act in September. In November, the BJP came to power in the State and the Act has gone into cold storage. The Haryana government is set to establish a State-level board dedicated to the social and economic security of gig workers. The Telangana government is also currently in the process of drafting a similar bill as per sources.

As far as Union government initiatives are concerned, in 2020, the Code on Social Security was introduced. It recognised those who freelance or work under short terms, and mandated employers to provide them benefits similar to those of regular employees.

RED FLAGS RAISED OVER RUNAWAY SILVER IMPORTS FROM UAE THROUGH GIFT CITY

In a major disruption for the bullion market, almost all of India's silver imports are now being handled by a few private players bringing the white metal from Dubai through the GIFT City exchange, which could cause significant revenue losses for the exchequer over time.

A trade research body has sought a probe into the relationships between export and import firms to identify and address any potential conflicts of interest, while warning that this silver market trend could extend to gold, platinum, and diamonds, further disrupting traditional import practices and market dynamics. India's imports of gold and silver from the UAE had jumped 210% in 2023-24 to \$10.7 billion. Total silver imports stood at \$5.4 billion.

In May, 87% of India's global silver imports came from Dubai at a reduced 8% duty and were cleared through the GIFT City exchange in Gandhinagar, which has been clearing all silver imports



from the UAE since December 2023. Imports from other countries and ports are virtually abandoned.

Earlier attempts by some banks to import silver from the UAE through other ports were questioned for not meeting rules of origin of the India-UAE free trade deal, think tank Global Trade Research Initiative (GTRI) flagged in a report.

India levies a 15% import duty on silver and only allows institutions nominated by the Reserve Bank of India (RBI) and the Directorate General of Foreign Trade (DGFT) to import the precious metal. However, the GIFT City exchange does not limit imports to RBI/DGFT-nominated agencies, registers private traders, and has found no rules of origin issues as flagged by customs elsewhere.

Under the CEPA signed in 2022, India has agreed to reduce the duty on silver imports to 0% over 10 years, subject to Dubai exporters meeting the rules of origin conditions.

“When banks like Yes Bank and RBL Bank attempted to import silver from the UAE at the concessional 8% duty through Chennai and Bengaluru ports, customs authorities demanded details on the rules of origin. The firms could not comply,” the GTRI report said, adding that officials required proof that the imports met the CEPA conditions.

RBI GROWTH ESTIMATES: JOBS, STILL

Amidst growing concerns over inadequate employment opportunities despite the economy growing at a fast clip, new estimates from the RBI suggest a pick up in job growth. As per the central bank’s KLEMS database, employment in the country grew by 4.67 crore in 2023-24. However, these are provisional estimates and they do not provide the disaggregated sector-wise job numbers for the latest year. In recent years for which the disaggregated data is available (2017-18 to 2022-23), however, much of the increase in employment has occurred in agriculture, followed by construction and trade — sectors marked by low levels of productivity. As per the database, value added per worker, a measure of labour productivity, is the lowest in the case of agriculture, and in the case of construction and trade is substantially lower than in the most productive sectors of the economy. This low level of productivity has implications for workers’ wages.

In recent years there has been a sharp pick up in the labour force participation rate as seen in data from the periodic labour force surveys. Much of this increase was driven by women joining the labour market in greater numbers. Worryingly, a sizable number of these new entrants are engaged in self-employment, as helpers in household enterprises. This indicates the absence of more productive, more remunerative jobs. Alongside, data from the recently conducted survey of unincorporated sector enterprises affirms that a sizable section of the labour force continues to be engaged in a low productive informal sector. In 2022-23, the number of unincorporated enterprises or informal sector firms stood at 6.5 crore and roughly 11 crore workers continue to be engaged in these establishments. In such firms, value added per worker is only a fraction of that in the larger formal firms.

The issue of inadequate creation of more productive forms of non-farm employment has been at the heart of India’s development story. The State of Working India 2023 report had pointed towards the weak link between long run GDP and non-farm employment growth. While successive governments have taken steps to facilitate job creation, progress has been patchy. With growing capital intensity of production, even in the labour intensive sectors, this will become even more



challenging. The India Employment Report 2024 had noted that “the production process has increasingly become capital-intensive and labour-saving”. It had also pointed out that the skill intensity of employment had increased, “which was contrary to the labour market needs of the country”. Ensuring that growth translates to more productive job opportunities is the foremost challenge before the government.

A CASE FOR CREATING A BUFFER STOCK OF ESSENTIAL FOOD ITEMS TO EVEN OUT PRICE FLUCTUATION

The Reserve Bank of India (RBI) maintains foreign exchange reserves, now at over \$650 billion, not to interfere with the normal functioning of the currency market. It seeks, instead, to ensure that exchange rate movements, while market-determined, are “orderly” and there is no “excessive volatility”. A similar approach is arguably required in food. The government must consider building a buffer stock not just of rice and wheat, but even pulses, oilseeds, sugar, skimmed milk powder (SMP) and staple vegetables. The idea, again, is not to set prices or supplant the market, but to curb too much volatility that’s neither in consumer nor producer interest and also makes the RBI’s job harder: When “core” inflation (that is, exclusive of food and fuel) is at a record low of 3.1 per cent (year-on-year for May), but retail food inflation stays elevated at 8.7 per cent, does the central bank cut or raise interest rates? Or leave them unchanged, as in the current uncertain scenario?

The increasing volatility and unpredictability of food prices has primarily to do with climate change — fewer rainy days and extended dry spells, interspersed with intense precipitation, and also shorter winters and heat waves. The latter’s effects have been felt this time in poor crops of rabi pulses, tomato, potato and even wheat in central India. Such supply shocks — whether induced by climate, war or pandemic — typically engender very large price spikes. Farmers respond by massively ramping up production that, in turn, leads to steep price declines. Take milk. Last year, in February-March, dairies were paying farmers Rs 37-38 per litre for cow milk. The same dairies have today slashed procurement prices to Rs 26-27 because of SMP realisations crashing to Rs 200-210 per kg, from their February-March 2023 peaks of Rs 315-320. These low prices, discouraging dairies from procuring and farmers from feeding their animals properly, could be a precursor to milk shortages and inflation next year.

Creating a buffer stock of essential food items — procuring from farmers/processors during years of surplus production and offloading the same in times of crop failures — can go some way in evening out such extreme price fluctuations. The fiscal cost shouldn’t be much, as the stocked commodities (potato, onion and tomato can even be stored in dehydrated form such as flakes, paste and puree) are to be disposed of during scarcity/inflationary periods at near-market rates. The government did undertake such open market sales of wheat and chana from its previously accumulated stocks, which helped moderate cereal and pulses inflation. A buffer stocking policy in food items will also do away with the need for regressive anti-farmer measures such as banning exports or imposing stock limits on private traders and processors.

THE FOOD PRICE CONSTRAINT

Dharmakirti Joshi , Pankhuri Tandon and Sharvari Rajadhyaksha write: Monetary policy in India has been navigating diverging economic trends. While GDP growth continues to surprise on the upside, core inflation seems set on a downward trajectory. However, food inflation — typically



considered idiosyncratic — has stayed stubbornly elevated, restricting the fall in the consumer price index (CPI) and restraining the Monetary Policy Committee of the Reserve Bank of India.

— Food commands nearly 40 per cent weight in the CPI basket... Headline inflation has been above 6 per cent in 24 months (the upper limit of RBI's tolerance band of 2-6 per cent) while food has been above 6 per cent in 28 months. Even as overall CPI slid to 5.4 per cent in 2023-24, food rose to 7.5 per cent. It climbed further to 8.7 per cent in the first two months of the current financial year.

— CPI has softened recently due to the slide in non-food inflation, including core inflation (inflation excluding food and fuel). At 3 per cent in May, core inflation was at a record low. This fall would suggest muted demand pressures on inflation, creating scope for rate cuts.

— Recent research (Are food prices the 'true' core of India's inflation?, RBI Bulletin January 2024) shows that large and persistent food shocks spill over into non-food inflation. Additionally, high food inflation hits the poor more since it has a higher weight in their consumption basket. Our assessment shows that the bottom 20 per cent of the population in rural and urban areas currently face nearly 50 basis points higher inflation than the top 20 per cent.

— In 2022-23, heatwaves and unseasonal rains contributed to a surge in inflation, even as the monsoon turned out normal. In 2023-24, El Niño was aggravated by global warming, leading to the driest August India had seen in recorded history.

— Heatwaves have affected crop production by depleting groundwater levels, shrivelling wheat grains and pest infestations. They also affected dairy and poultry output. On the other side, unseasonal rains hit crops during harvesting and transportation stages.

— Controlling climate change's impact on food will require help from fiscal policy. Agricultural infrastructure needs to be upgraded — from production to transportation and storage.

— For production, policy can help promote climate-resistant crop varieties... Agricultural research needs to be incentivised. Currently, investments in R&D are just around 0.5 per cent of agriculture GDP, according to a 2023 paper by ICRIER.

— Irrigation infrastructure needs to be stepped up amid heatwave-linked risks to water availability. Despite government efforts, only 57 per cent of agriculture is covered by irrigation so far. Cold storage and food processing should be further encouraged.

For Your Information:

Challenges for the farm sector

— One, the climate is changing irreversibly for the worse. We are already witnessing the beginning of erratic climatic events impacting crop production and livelihoods.

— Two, the World Trade Organisation will not change and we will have to live with its iniquitousness. For many years, the US has deliberately crippled the dispute-settlement mechanism...

— Three, the large number of small land holdings (85 per cent of total arable land) fundamentally limits the scope for primary producers to eke out a life of dignity from their profession.



— Four, the global priority to ensure low food prices for consumers is easiest achieved by artificially driving down farm-gate prices. This makes farming environmentally unsustainable and economically unremunerative.

— Five, depleting aquifers due to the insatiable demand for water for agriculture is reaching a threshold point where it won't be economically viable to extract water for irrigation in food basket regions.

MSME BODIES URGE RBI TO DOUBLE THRESHOLD PERIOD FOR SMA-2 STRESSED LOAN ACCOUNTS

Federation of Indian Micro and Small & Medium Enterprises Industry (FISME) on Monday urged the Reserve Bank of India (RBI) to extend the threshold period for stress loan accounts under the special mention account-2 (SMA-2) category to 180 days from 90 days currently. The association also requested the RBI to review the definition of wilful defaulter for MSMEs.

"The current SMA classification triggers penal actions even for minor delays (SMA-0), impacting credit score (SMA-1), and restricting credit access (SMA-2). This rigidity disregards genuine reasons for delays, such as late payments from buyers," FISME said in a memo on the meeting with RBI officials.

Before a loan account turns into an NPA (non-performing assets), banks are required to identify incipient stress in the account by creating a sub-asset category called special mention accounts (SMA). An account is transferred to this category once the earliest signs of sickness or irregularities in loan repayment are identified.

There are three types of SMAs – SMA-0 (when principal or interest payment is not overdue for more than 30 days but account is showing signs of incipient stress); SMA-1 (when principal or interest payment overdue between 31-60 days); and SMA-2 (when principal or interest payment overdue between 61-90 days).

When an account is under SMA category, MSME borrowers cannot utilize existing credit lines to pay dues, hindering recovery efforts, the association said.

The meeting, held in Mumbai at the RBI's invitation, was presided over by Deputy Governors M Rajeshwar Rao and J Swaminathan.

Representatives from MSME bodies including the India SME Forum, the Federation of Indian Micro and Small & Medium Enterprises (FISME), and Laghu Udyog Bharti attended the session. There was broad consensus among bodies to double the SMA-2 period to 180 days.

According to Vinod Kumar, President of the India SME Forum, the current SMA classifications, instead of supporting businesses, effectively restricts MSMEs access to credit at crucial times. An MSME can take anywhere between 40 to 45 days to manufacture a product. Then, to put it in the market and to get the money, it can take as long as 200 days. Paying within 90 days is difficult when it has to keep on feeding its operations, he said.

"You have a mechanism to help the MSME– during incipient stress, nominate it as SMA-0. But the moment an MSME goes SMA-0, the banker will single it out and block access to credit. Instead of actually supporting the business, you've blindfolded it and kept it outside in the rain," Kumar explained.



“A revised SMA framework with extended timelines, SOPs for bank intervention, and a more pragmatic definition of ‘willful defaulter’ is crucial to support MSMEs. Additionally, data collection by RBI will enable a comprehensive understanding of the challenges faced by MSMEs and facilitate the development of targeted solutions,” the association said. FISME urged the RBI to review the wilful defaulter definition, which is currently overly broad, and proposed a more nuanced approach, considering factors like current ratios and past loan renewals.

The industry association also advocated for easing credit norms for export-oriented MSMEs, suggesting that Letters of Credit issued by banks should be considered sufficient security for extending additional credit for export-related inputs.

WHY UP'S FEE WAIVER ON STRONG HYBRIDS MAY PUSH GREEN MOBILITY

The Uttar Pradesh government waived off registration fees for strong hybrid and plug-in hybrid electric vehicles (EVs) on July 5, joining Tamil Nadu and Chandigarh in offering incentives for cleaner alternatives to petrol and diesel vehicles. This move comes as hybrid vehicles gain traction globally by offering improved fuel economy without the range anxiety of full EVs.

Recent sales figures highlight this shift in India's automotive market. In FY23, strong hybrids made up 0.5 per cent of total sales, which surged to 2.2 per cent in FY24. By comparison, the share of battery EVs grew at a slower pace, from 1.3 per cent to 2.3 per cent of the market, and there are signs of a further slowdown in this category.

The UP government's decision could encourage more states to introduce similar incentives, potentially accelerating India's transition to a greener transportation sector.

Waiver to make hybrids cheaper

Hybrid vehicles combine an internal combustion engine (ICE) with an electric motor, working together to power the car. Strong hybrids can switch between running solely on the electric motor, the ICE, or both simultaneously, optimising fuel efficiency.

Unlike full EVs or plug-in hybrids, strong hybrids don't require external charging. Their batteries are recharged through regenerative braking and by the ICE itself, eliminating dependence on charging infrastructure. This self-charging capability makes strong hybrids particularly attractive in regions where EV charging networks are still developing.

The UP government's 100 percent waiver on registration fees for strong hybrids could save buyers up to Rs 3.5 lakh. The waiver is likely to boost sales for manufacturers like Maruti Suzuki India, Toyota Kirloskar Motor, and Honda Cars India, all of which offer strong hybrid models. Previously, strong hybrids priced above Rs 10 lakh ex-showroom incurred a 10 percent road tax.

In February last year, the Tamil Nadu government had also announced incentives in the form of road tax, registration, and permit fee exemptions for strong hybrids. The Chandigarh administration also offers road tax rebate on strong hybrid vehicles priced below Rs 20 lakh.

Maruti, Toyota bet on hybrids

Countries everywhere, including India, are pushing toward electrification. In India, Tata Motors, Mahindra & Mahindra and Hyundai Motor have been betting big on EVs. But passenger car market leader Maruti Suzuki has taken a more conservative approach, with no battery EV in the market



so far. Maruti has, however, prioritised hybrids in its portfolio in partnership with Toyota Kirloskar.

According to HSBC research, hybrid vehicles are the more practical medium-term solution for the country's decarbonisation efforts and, more importantly, are less polluting.

"We have a long-standing belief that hybrid and compressed natural gas cars are a practical medium-term (5-10 years) solution for India, while the country moves towards eventual electrification. Hybrids are critical not just from a cost of ownership perspective, but also for India's decarbonisation drive," HSBC said in a note issued to investors earlier this year.

The note said that total (well-to-wheel, or WTW) carbon emissions from an EV is currently 158 g/km, compared to 133 g/km for hybrids — which means that a hybrid is at least 16% less polluting than the corresponding EV. These numbers are 176 g/km and 201 g/km for corresponding petrol and diesel vehicles respectively.

Hybrids take the lead globally

The shift towards hybrids is not unique to India. Globally, hybrid sales are surging as full EV adoption slows. In the United States, the average time to sell EVs doubled from 34 days in January, 2023 to 72 days in February, 2024. Meanwhile, hybrid EV sales soared by 53 per cent in 2023, reaching a record 1.2 million units. The trend continued in the first three months of 2024, with hybrid sales jumping 45 per cent year-on-year, while EV sales growth decelerated to just 2.7 per cent.

Europe shows a similar trend. In the first quarter of 2024, hybrid sales grew by 18 per cent year-on-year, significantly outpacing the 3.8 per cent growth in EV sales.

IN AN ELECTRIC VEHICLE, WHAT IS REGENERATIVE BRAKING?

The impulse to be sustainable — driven by the incessant pressure to lower our emissions — often manifests as lowering consumption and increasing reuse alongside reforms like tweaking consumer behaviour. Electric vehicles are the site of many of these changes, aided by state-led incentives and subsidies. Regenerative braking is an important mechanism in these vehicles that increases their energy use efficiency.

What is braking?

Braking is the mechanism by which an automotive vehicle in motion slows down. A vehicle moving faster has more kinetic energy than a vehicle moving slower, so the process of braking removes (mostly) kinetic energy from the vehicle. The law of energy conservation means this removed energy has to go somewhere.

For example, the disc brake is one type of mechanical brake: it works by pressing brake pads against a disc attached to spinning wheels, and uses friction to convert some of the wheels' kinetic energy into heat. This is why the discs of disc brakes have holes cut into them, to dissipate heat better.

Another type is the induction brake, often used in trains: a magnet induces circular electric currents in a spinning wheel (made of a conducting material, like metal). These currents produce their own magnetic field, which opposes that of the external magnet. The opposition acts like a



drag on the wheel and forces it to slow down. In terms of energy: the metal resists the flow of the circular currents and dissipates heat.

What is regenerative braking?

Regenerative braking is a brake system designed to convert the kinetic energy of the wheels to a form that can be stored and used for other purposes. As such, it creates a process in which at least part of the energy delivered to the vehicle's wheels can be recovered in a situation when the vehicle doesn't need it.

Regenerative braking is one type of dynamic braking. In an electric vehicle, of the types becoming common on Indian roads, a battery onboard the vehicle draws electric power from the grid and stores it. When the vehicle moves, the battery powers an electric motor that propels the vehicle, converting electrical to mechanical energy. This motor is called the traction motor.

During regenerative braking, the motor operates as a generator, turning mechanical energy back to electrical energy. In the vehicle, this means an electric current will be produced as the vehicle brakes, which is stored separately in a battery. In some other vehicles, especially trains, the current is fed back into the traction motor. The other type of dynamic braking is rheostatic braking, where the current is sent to an array of resistors that dissipate the electrical energy as heat. It is often necessary for a vehicle to have both regenerative and rheostatic braking in case the electrical energy recovered can't be stored or used right away.

How does motor become a generator?

A motor has two essential parts: a rotor (the thing that rotates) and a stator (the thing that's stationary). In a rudimentary design, the stator consists of permanent magnets or electromagnets while the rotor consists of current-carrying wires coiled around in loops. The stator surrounds the rotor.

When a charged particle, like an electron, moves inside a magnetic field, the field exerts a force on the particle called the Lorentz force. Whether the force will push or pull the wire in which the electron is moving depends on the direction of the electric current.

This is when the coiling helps. The current at the coil's two ends moves in opposite directions, so the magnetic fields imposed by the stator will push on one end of the coil and pull on the other. And these opposing forces will continue to act on the two sides of the rotor until the voltage across the wire is constant. Thus, a motor converts electrical energy to rotary motion.

In a generator, mechanical energy from an external source can be fed to the rotor to induce a current in the stator. Simply speaking, by switching the traction motor between these two configurations, an electric (or hybrid) vehicle can implement regenerative braking.

Does regenerative braking have downsides?

While it is a simple energy recovery mechanism, regenerative braking has some downsides. For example, it alone often doesn't suffice to bring an electric vehicle to a halt.

It has to be used together with a conventional system that dissipates some of the kinetic energy as heat.



Such a system is also required to prevent vehicles from backsliding downhill, which many regenerative brakes won't prevent.

Another example is that the amount of energy a regenerative brake can recover drops as the vehicle's velocity drops as well. This said, a regenerative brake can be beneficial for an electric vehicle's energy-use efficiency in stop-start traffic.

Are there other ways to recover energy?

The design of a regenerative brake depends on the energy form to which the mechanical energy from the wheels is to be converted. An electric vehicle funnels it into a generator and obtains a current, which is stored in a battery or a supercapacitor. Similarly, the mechanical energy can be used to increase the angular momentum of a rotating flywheel. Flywheels are especially useful because they can receive energy much faster than other such systems.

For every unit increase in speed, they also store exponentially more energy. Engineers have been able to build flywheels with carbon-composites that, in a vacuum, can spin at up to 50,000 rpm. The flywheel can be linked to a reciprocating engine to manage or augment its output, like in Formula One racing, or to a gyroscope to help submarines and satellites navigate.

Recovered kinetic energy can also be fed to a pump that compresses air, which can be useful to start internal combustion engines.

WHAT IS DIGITAL BHARAT NIDHI, GOVT'S FRESH ATTEMPT AT IMPROVING RURAL TELECOM CONNECTIVITY?

The Department of Telecommunications (DoT) on July 4 released draft rules to operationalise the Digital Bharat Nidhi, in a fresh attempt by the central government at increasing telecom connectivity in rural areas.

Digital Bharat Nidhi would replace the erstwhile Universal Service Obligation Fund (USOF), which is a pool of funds generated by a 5 per cent Universal Service Levy charged upon all the telecom fund operators on their Adjusted Gross Revenue (AGR).

The idea is that this money would be used to fund the expansion of telecom networks in remote and rural areas, where private companies may otherwise resist offering their services due to them not being revenue-generating markets.

With the Centre notifying parts of the Telecom Act last month, it has also proposed additional rules for the final makeover of the USOF as the Digital Bharat Nidhi (DBN) – which would have a relatively wider scope than the USOF.

How the Digital Bharat Nidhi will work

As per the Telecom Act, contributions made by telecom companies towards the Digital Bharat Nidhi will first be credited to the Consolidated Fund of India (CFI). All revenues that the government receives, including loans raised and all money received in repayment of loans, are credited to the CFI. The government also incurs its expenditures from this fund.

The Centre will deposit the collected funds to the DBN from time to time. Funds collected under the DBN will be used to support universal service through promoting access to and delivery of telecommunication services in underserved rural, remote and urban areas; fund research and



development of telecommunication services, technologies, and products; support pilot projects, consultancy assistance and advisory support for improving connectivity; and for the introduction of telecommunication services, technologies, and products.

As per the draft rules issued by the DoT on how the DBN will be operationalised, the Centre will appoint an “administrator” who will select “DBN implementers” through “bidding” or invitation of applications from eligible persons.

This so-called administrator will determine the modalities of providing funding to DBN implementers on a case-by-case basis, including but not limited to full funding, partial funding, co-funding, market risk mitigation, and risk capital.

The DBN shall fund schemes and projects for providing targeted access to telecommunication services for underserved groups of society such as women, persons with disabilities and economically and socially weaker sections, as per the draft rules.

The schemes and projects to achieve the objectives of the DBN shall meet criteria such as the introduction of next-generation telecommunication technologies in underserved rural, remote and urban areas; improving affordability of telecommunication services in such areas; promote innovation, research and development, promotion and commercialisation of indigenous technology development and associated intellectual property, including creation of regulatory sandboxes; developing and establishing relevant standards to meet national requirements and their standardisation in international standardisation bodies; and encouraging start-ups in the telecommunications sector including the manufacturing of telecom equipment, among other things.

“Any DBN implementer receiving funding from the DBN for establishing, operating, maintaining, or expanding a telecommunication network shall share and make available such telecommunication network, and telecommunication services being delivered using such telecommunication networks on an open and non-discriminatory basis, and in accordance with the instructions issued from time to time by the administrator,” the draft rules said.

Underutilisation of USOF

Since its establishment in 2003, a common criticism of the USOF has been its relative underutilisation.

According to information shared in Parliament by former Minister of State for Communications Devusinh Chauhan in December 2022, between 2017 and 2022, the government had collected Rs 41,740 crore as part of contributions made by telcos towards the USOF, of which it had utilised Rs 30,213 crore – about 72 per cent.

Most notably, in 2019-20, the collection was Rs 7,962 crore, of which the utilised amount was just Rs 2,926 crore. In the period specified by the former minister, the government did not achieve complete utilisation even once.

In fact, in FY23, the government revised the expenditure estimates from the USO fund to Rs 3,010 crore, which is 200% less than the budgetary estimate of Rs 9,000 crore. A key reason for the weak spending from the USOF can be attributed to the underspending of funds allocated for the BharatNet project for fibre connectivity to villages.



PHONEPE FIGHTS FOR A BIGGER APP STORE PLAY

Six months since its launch, PhonePe's Indus Appstore — an alternative to Google Play Store — continues its fight for large-scale adoption by smartphone manufacturers and consumers.

The app store has recorded two million downloads since its launch, which is just 0.3% of the country's smartphone users. According to analysts, the pace needs to quicken if it has to dent Google's near monopoly in the segment.

The biggest hurdle Indus faces is convincing smartphone manufacturers to pre-install it on their devices. Users have to download it from the company's website, and also see a warning from Google's Android that the file may be unsecured.

Google Play Store comes pre-installed in all Android phones.

Most smartphone manufacturers are evaluating PhonePe's proposal to pre-install Indus Appstore, executives at smartphone companies said.

Demand from end-users, and privacy and security concerns are likely to shape their final decision.

According to smartphone manufacturer Lava, while deciding on pre-installation or adopting any feature or app which has a consumer demand, the company goes through a complete testing cycle related to performance and security norms.

Another industry executive said unless a manufacturer unbundles Google, which is "nearly impossible to do, you cannot create an alternative app store". Unbundling would mean preventing or restricting its apps from being pre-loaded on Android smartphones, with users having a choice to uninstall them whenever they want.

Before being acquired by PhonePe, Indus Appstore was called Indus OS. It operated an app marketplace called App Bazaar, which partnered with 12 mobile brands in India and even powered Samsung's default app store, Galaxy Store. However, it failed to make an impact.

Key features of Indus Appstore include no commissions on in-app purchases unlike the 15-30% fee that Google and Apple charge. It allows developers to list their apps in 12 Indian languages, besides English. It supports third-party payment methods, and allows developers to upload media and videos to their app listings in these languages.

Other localised features offered by Indus Appstore include app discovery via short videos, and the easy login with mobile number instead of email address, and a 24x7 support for developers.



LIFE & SCIENCE

WHAT IS THE INTERNET ARCHIVE AND WHY IS IT FACING BACKLASH FROM BOOK PUBLISHERS?

The story so far:

Internet Archive (IA), a non-profit that aims to digitise, preserve, lend, and share multi-media content, is embroiled in a major legal challenge as it faces off against traditional publishers accusing it of copyright violations. The free digital library is fighting the forced removal of around half a million books from its platform, which it argues functions like a library.

What is the case against Internet Archive?

While a great number of books digitised and uploaded by Internet Archive were already in the public domain — such as historical sources, old classics, etc. — many traditional publishers have alleged that Internet Archive violated their copyrights and illegally made their books available to the public, by scanning physical copies and distributing the digital files.

In the case Hachette vs Internet Archive that began in 2020, traditional publishers Hachette, HarperCollins, Wiley, and Penguin Random House sued Internet Archive. On March 24 last year, District Judge John G. Koeltl issued an order in favour of the publishers. “IA’s Website includes millions of public domain ebooks that users can download for free and read without restrictions,” noted the order, adding, “Relevant to this action, however, the Website also includes 3.6 million books protected by valid copyrights, including 33,000 of the Publishers’ titles and all of the Works in Suit.” In particular, traditional publishers were against IA’s temporary ‘National Emergency Library’ (NEL) initiative that it launched during the COVID-19 pandemic. This was to allow more users to access the e-books in its collection while physical libraries were locked down. “During the NEL, IA lifted the technical controls enforcing its one-to-one owned-to-loaned ratio and allowed up to ten thousand patrons at a time to borrow each e-book on the Website,” stated the 2023 order.

In general, IA uses a system known as “controlled digital lending” to limit the number of people who can access an e-book. It ended its emergency library system after being hit with the lawsuit. Internet Archive used the doctrine of fair use to defend itself in the case, but this did not hold up. The organisation said it would appeal, but did so after some delay.

The case is ongoing, with the oral argument stage of the appeal taking place on June 28.

Why are books being removed?

As a result of the lawsuit, IA was forced to remove over half a million books from its database, with the Director of Library Services at Internet Archive, Chris Freeland, calling out the “profoundly negative impact” on users.

According to testimonies collected by IA, the mass removal hurt students who could not access books for academic research. While IA identifies itself as a library, it has been compared to a shadow library or a piracy database by traditional publishers, who disagree with its “controlled digital lending” approach. Despite the removal, however, Internet Archive is still home to a rich collection.



As of late June, the web archive said it contained 835 billion web pages, 44 million books and texts, 15 million audio recordings, 10.6 million videos, 4.8 million images, and 1 million software programs. Live concerts and television programs also make up part of this collection.

What is Wayback Machine?

While Internet Archive buys physical books, digitises them, lends them to users, or makes them available for download, it has since 1996 also focused on preserving web pages. The platform claims users can explore over 866 billion saved web pages through its own search service.

“We began in 1996 by archiving the Internet itself, a medium that was just beginning to grow in use. Like newspapers, the content published on the web was ephemeral — but unlike newspapers, no one was saving it. Today we have 28+ years of web history accessible through the Wayback Machine and we work with 1,200+ library and other partners through our Archive-It program to identify important web pages,” noted Internet Archive on its website. Users can help IA archive parts of the internet at no cost, or they can reach out to the platform to make their own work publicly available.

How can one use Wayback Machine?

Using Wayback Machine is easy and free of cost, though results are not always guaranteed.

To begin, navigate to the Wayback Machine web page, where you will see a bar in which you can enter a URL/keywords relevant to the web page or content you are looking for.

Then, hit ‘enter’ and wait for the results to be shown. If the content was new, rarely viewed, or deleted a very long time ago before being captured for the archive, you may not get many results or any at all.

However, you have a good chance of finding content such as old websites that no longer exist today, earlier versions of existing websites, deleted social media posts, archived versions of paywalled articles, and archived versions of content that is blocked or censored in your jurisdiction.

A graphic will show you how many times Internet Archive “crawled” the content in the past months or even years, allowing you to click on the calendar bubbles to pick out “snapshots” of the web content from different periods of time.

However, the service can be patchy at times and not all content might have been perfectly saved; broken links, missing media, or pages that won’t load are often the end result.

While Wayback Machine is useful for personal research or to access information sources, users should be cautious about relying on the data obtained through such sources, as the saved information can sometimes be outdated or inaccurate.

GRAPHENE: A SIMPLE WONDER

WHAT IS IT?

When the same element is able to exist in different forms, the forms are called allotropes. Graphene, thus, is an allotrope of carbon, along with diamond and graphite. It consists of a single layer of carbon atoms that are linked to each other in a honeycomb pattern.



Graphene is among the most versatile materials known to humankind. As a nanomaterial, it is stronger than diamond, more conductive than silver, more elastic than rubber, and lighter than aluminium. Many people called it a “wonder material”.

It is simple to make graphene: use scotch tape to peel away the lead of a pencil for a while. Under a microscope, you should be able to see graphene residue left on the tape.

However, scientists use more sophisticated techniques in laboratories, like chemical vapour deposition, to deposit graphene in order to make stronger car tires or when making chips to replace those made of silicon in smartphones. When graphene is mixed with concrete, the latter becomes 25% stronger and less carbon-intensive.

Graphene also develops some unusual properties in a twisted bilayer form. In 2019, for example, physicists found that when one sheet of graphene is placed above another and rotated by 1.1 degrees relative to the bottom layer, the stack becomes a superconductor at low temperature.

LATE TO BED OR EARLY TO RISE? THE DEBATE CONTINUES

It’s a boring question often asked on an uninspiring first date: Are you a night owl or a morning lark? It leads to a predictable conversation, almost as insipid as those about zodiac signs. A debate may follow about the benefits of joining the “5 am club” and just how important early morning “me time” is for pre-dawn enthu cutlets. On the other hand, the late-nighters romanticise the quiet of the night and how the creative juices flow better after a post-prandial drink. So the conversation goes, with an argument that cannot be settled hanging in the air. But perhaps, the matter can be settled through science.

A study by researchers at Imperial College London compared data from 26,000 people to understand how sleep timings, duration and chronotype (basically, whether a person is a night owl or a morning lark) affect cognitive functioning and reasoning. The worst off are those who don’t get the right amount of sleep — both too much and too little are bad. Then come the much-vaunted early risers, who fall behind those who stay up late at night when it comes to brain functioning. Understandably, the study is being brandished on social media by those who like to sleep in. Long dismissed as lazy, they are citing science to defend their nocturnal leanings.

It might, however, be too early to call it a day on the sleep debate. Studies come and go, and there will certainly always be political leaders and corporate bosses showing off about how much they work and how little they sleep — unlike mere mortals who want less of the first and more of the second. Science can hardly hold a candle to such self-righteousness. Perhaps that’s okay. Some pointless debates — whether there should be pineapple on pizza, if there can be such a thing as vegetarian biryani and, of course, night owls vs 5 am-types — are needed for those boring dates.

HOW CLIMATE CHANGE FUELLED HURRICANE BERYL’S RECORD EARLY INTENSIFICATION

The storm, which tore through the Caribbean islands earlier this month, killed at least 11 people after triggering intense floods and dangerous winds in Jamaica, Grenada, Saint Vincent and the Grenadines, and northern Venezuela.

Hurricane Beryl became the earliest storm on record during the Atlantic hurricane season to have reached the highest Category 5 classification.



The storm, which tore through the Caribbean islands earlier this month, killed at least 11 people after triggering intense floods and dangerous winds in Jamaica, Grenada, Saint Vincent and the Grenadines, and northern Venezuela. On Monday, it made landfall in Texas, United States, as a Category 1 storm, flooding streets and knocking out power for more than two million people in the state.

How are hurricanes formed?

Hurricanes, or tropical storms, form over warm ocean waters near the equator. When the warm, moist air from the ocean surface rises upward, a lower air pressure area is formed below. Air from surrounding areas with higher air pressure rushes into this low pressure area, eventually rising, after it also becomes warm and moist.

As warm, moist air rises, it cools down, and the water in the air forms clouds and thunderstorms. This whole system of clouds and winds gains strength and momentum using the ocean's heat, and the water that evaporates from its surface. Storm systems with wind speeds of 119 kmph and above are classified as hurricanes.

Hurricanes are classified using the Saffir-Simpson Hurricane Wind Scale into five categories (Category 1 to Category 5) based on their sustained wind speeds. While Category 1 hurricanes bring winds of 119 to 153 kmph, Category 5 hurricanes, which are the strongest, have winds of 252 kmph or higher. Storms that reach Category 3 and higher are considered major hurricanes due to their potential to inflict significant damage.

Scientists are still debating over how exactly climate change impacts hurricanes. There is agreement, however, that at the very least, climate change makes hurricanes more prone to rapid intensification — where maximum wind speeds increase very quickly.

The frequency and magnitude of these rapid intensification events in the Atlantic seems to have spiked between 1971 and 2020, according to a 2023 study published in the journal Nature.

Therefore, as the world and its oceans continue to become warmer, scientists are concerned that even more powerful hurricanes could form in the near future.

"We're essentially 'stacking the deck' of extreme events against ourselves, making events like Hurricane Beryl not only possible, but more likely," Andra Garner, an assistant professor at Rowan University, told the BBC.

INDIA TO RATIFY HIGH SEAS TREATY: WHAT IS THE AGREEMENT — AND ITS SIGNIFICANCE?

India has decided to sign and ratify the High Seas Treaty, a global agreement for conservation and protection of biodiversity in the oceans, that is often compared to the 2015 Paris Agreement in its reach and impact.

— The High Seas, the oceans outside the national boundaries of countries, are international commons, open for use by all. The resources found in these areas, which constitute about 64% of the ocean surface, are open for extraction by anyone. The exact activities, and the manner in which they can be carried out, are governed by international and regional laws.



— The most notable and wide-ranging of the laws is the UN Convention on the Law of the Seas, or UNCLOS, which defines the rights and duties of the country, and lays down the general principles of acceptable conduct in the oceans.

— The High Seas Treaty, once it is ratified by the requisite number of countries and becomes international law, would operate under the UNCLOS framework, and become one of its implementing instruments. There are already two similar agreements under UNCLOS, one that regulates the extraction of mineral resources from ocean beds, and the other about conservation of migratory fish stocks.

— The High Seas Treaty would define and demarcate marine protected areas in biodiversity-rich zones of the oceans that are under stress. Similar to what happens in national parks or protected wildlife areas, certain kinds of human activities in these marine protected areas, like deep sea mining, would be prohibited or regulated.

— The treaty also seeks to ensure that any benefits accruing from ocean life forms, like drug development, is considered a global common, is free of intellectual property rights and equitably shared with everyone. Besides, commercial activities in the open oceans that are likely to result in causing large-scale pollution would now require an environmental impact assessment.

For Your Information:

— The High Seas Treaty, also known as the agreement on Biodiversity Beyond National Jurisdictions (BBNJ), would become international law 120 days after at least 60 countries submit their formal ratification documents. As of now, 91 countries have signed the treaty, but only eight of them have ratified and made the submission.

RECORD-HIGH TEMPERATURES IN WESTERN US DUE TO ‘HEAT DOMES’: WHAT IS THE PHENOMENON?

The entire western United States has come under the grip of a sweltering heatwave, which began last week. Nearly 75 million people are under heat alerts, and temperature records are tumbling.

The worst affected is California, where at least a dozen cities broke all-time high-temperature records. For instance, between Friday (July 5) and Saturday (July 6), mercury soared never-seen-before 48.33 degree Celsius and 47.22 degree Celsius in Redding, a city in Northern California, and Ukiah, north of San Francisco, respectively. Palm Springs, in Southern California, touched a record-breaking high of 51.11 degree Celsius.

The scorching temperatures and dry conditions are a result of a heat dome centred over California.

Here is a look at what a heat dome is, how it is tied to the behaviour of the jet stream, and how climate change impacts heat domes.

What is a heat dome?

A heat dome is a weather phenomenon where a high-pressure system in the atmosphere traps warm air like a lid on a pot, for an extended period of time. As the warm air is not able to rise upward, the sky remains clear — clouds are formed under the opposite circumstances as the rising warm air cools down, and the water in it condenses out.



The high-pressure system allows more sunlight to reach the earth, which results in more warming and drying of soil. This leads to less evaporation and reduces the likelihood of the formation of rain clouds. The longer the heat dome stays in one place, the warmer conditions can get with every passing day. While heat domes cause heatwaves, they can occur without heat domes as well.

What is the role of the jet stream?

A heat dome's formation is tied to the behaviour of the jet stream — an area of fast-moving air high in the atmosphere that usually helps move weather systems along the Earth's surface.

Typically, the jet stream has a wave-like pattern that keeps moving from north to south and then north again. When these waves get bigger and elongated, they move slowly and sometimes can become stationary. This is when a high-pressure system gets stuck in place, and leads to the occurrence of a heat dome.

How is climate change impacting heat domes?

Scientists are still debating over how climate change is impacting the blocking weather events that cause heat domes. However, they have ascertained that rising global temperatures have made heat domes larger and more intense.

A 2021 study carried out by an international team of 27 climate researchers, who were part of the World Weather Attribution, found that searing temperatures recorded during the heat dome in Canada, which occurred in June that year, “would have been virtually impossible without the influence of human-caused climate change”.

Another study, published in the journal Nature 2023, indicated that the intensity of heat domes is outpacing the rate of global warming — which means that climate change is fuelling their intensity.

“The intensities of hot extremes associated with... heat dome-like atmospheric circulations increase faster than background global warming in both historical change and future projection”, the study said.

WHY RISING ARCTIC WILDFIRES ARE A BAD NEWS FOR THE WORLD

Smoke from raging wildfires has once again darkened the skies over the Arctic. It is the third time in the past five years that high intensity fires have erupted in the region, Europe's Copernicus Climate Change Service (C3S) said last week. A majority of fires are in Sakha, Russia, where more than 160 wildfires charred nearly 460,000 hectares of land up until June 24, according to Russia state news agency Tass.

The June monthly total carbon emissions from the wildfires are the third highest of the past two decades, at 6.8 megatonnes of carbon, behind June 2020 and 2019, which recorded 16.3 and 13.8 megatonnes of carbon respectively, C3S added.

Wildfires have been a natural part of the Arctic's boreal forest or snow forest and tundra (treeless regions) ecosystems. However, in recent years, their frequency and scale in the regions have increased, primarily due to global warming. More worryingly, these blazing wildfires are fueling the climate crisis.



Here is a look at why Arctic wildfires have become worse over the years, and how they are exacerbating global warming.

Why have Arctic wildfires become worse?

The Arctic has been warming roughly four times as fast as the world. While the global average temperature has increased by at least 1.1 degree Celsius above the pre-industrial levels, the Arctic has become on average around 3 degree warmer than it was in 1980.

This fast paced warming has led to more frequent lightning in the Arctic, which has further increased the likelihood of wildfires — lightning-sparked fires have more than doubled in Alaska and the Northwest Territories since 1975, according to a 2017 study.

Speaking to CNN, Robert H Holzworth, a professor of Earth and Space Sciences at the University of Washington, said, “Thunderstorms occur when there is differential surface heating, so an updraft-downdraft convection can occur... You need a warm moist updraft to get a thunderstorm started, and that is more likely to occur over ice free land than land covered with ice.”

Soaring temperatures have also slowed down the polar jet stream — responsible for circulating air between the mid- and northern latitudes — due to less of a temperature difference between the Arctic and lower latitudes. As a result, the polar jet stream often gets “stuck” in one place, bringing unseasonably warm weather to the region. It also blocks out low-pressure systems, which bring clouds and rainfall, possibly leading to intense heatwaves, which can cause more wildfires.

All three factors — rising temperatures, more frequent lightning and heatwaves — will most likely worsen in the coming years, thereby causing more wildfires in the Arctic. By 2050, it is estimated that wildfires in the Arctic and around the world could increase by one-third, according to a report by the World Wild Fund.

How Arctic wildfires can exacerbate global warming?

When wildfires ignite, they burn vegetation and organic matter, releasing the heat trapping greenhouse gases (GHGs) such as carbon dioxide (CO₂) into the atmosphere. That is why the rising frequency of wildfires around the globe is a matter of concern as they contribute to climate change.

However, in the case of Arctic wildfires, such GHG emissions are not the biggest worry. It is rather the carbon stored underneath the region’s permafrost — any ground that stays frozen for at least two years straight. Scientists estimate that Arctic permafrost holds around 1,700 billion metric tons of carbon, including methane and CO₂. That’s roughly 51 times the amount of carbon the world released as fossil fuel emissions in 2019.

Wildfires make permafrost more vulnerable to thawing as they destroy upper insulating layers of vegetation and soil. This can cause ancient organic materials such as dead animals and plants to decompose and release carbon into the atmosphere. In case a large-scale thawing of Arctic permafrost is triggered, it would be impossible to stop the release of carbon.

This would mean that the world will not be able to limit global warming within the 1.5 degree Celsius threshold. Breaching the limit will result in catastrophic and irreversible consequences for the planet.



“What happens in the Arctic doesn’t stay there — Arctic change amplifies risks globally for all of us. These fires are a warning cry for urgent action,” Mark Parrington, Senior Scientist at the Copernicus Atmosphere Monitoring Service, said in a statement last week.

To make matters worse, as of now, no one is keeping a tab on post-fire permafrost emissions, and they are not even fed into climate models. Therefore, there is no way to estimate their contribution to climate change.

IN REGULAR BREACHES OF 1.5 DEGREE CELSIUS PARIS PACT TARGET WARNINGS FOR A WARMER WORLD

The average global temperature between July 2023 and June 2024 was the highest on record, according to the European Union’s Copernicus Climate Change Service’s latest bulletin. The agency, among the World Meteorological Organisation’s key sources of climate data, has revealed that in the past 12 months, the planet was 1.64 degrees Celsius hotter than in the fossil fuel era. The findings do not immediately mean that the world has defaulted on the Paris Climate Pact’s 1.5 degrees threshold — that target is measured in terms of decadal averages and not yearly temperature. Last month was the Earth’s hottest June on record. The onset of La Nina might bring relief to people in several parts of the world. Nevertheless, there are enough reasons to see the EU agency’s data as a continuing shift in global temperatures. The “temporary” breaches of the 1.5-degree target over the past two years are warnings to brace for a warmer world and bolster adaptation mechanisms.

Reducing GHG emissions and limiting the amount of warming has so far been the prime focus of climate policymaking. However, mitigation targets have historically been inadequate and the global community has never agreed on who shoulders the greater burden of decarbonisation. At the same time, it is increasingly becoming evident that even a decimal-point increase in global warming makes extreme weather events more intense and frequent. Last year, the IPCC’s Synthesis Report warned that measures to build resilience are “largely small-scale, reactive and incremental with most focusing on near-term risks”. The report underlined the need to weather-proof agriculture, secure people’s livelihoods, protect the vulnerable from rising seas and rivers and strengthen healthcare systems.

In 2021, the New Delhi-based Council for Energy, Environment and Water’s study revealed that more than 80 per cent of India’s population is vulnerable to climate disasters, and most regions have low adaptive capacities. India does have a climate adaptation plan. But the toll taken every year by landslides, floods and heat waves underscores that much needs to be done to secure the vulnerable. Despite advancements, India’s weather reporting system finds it difficult to keep pace with climate-related complexities. The infrastructure of even the metros like Delhi, Mumbai, and Bengaluru struggles to cope with extreme rainfall episodes. Like most parts of the world, India’s climate adaptation project remains a top-down endeavour. It’s time that policymakers appreciated that climate change is a global phenomenon that cannot overlook local solutions.

HOPING FOR A MIRACLE AT COP29

We are back to where we had left off during COP28. In the recently concluded Bonn talks, a precursor to COP29 (to be held in Baku in November), there was no consensus regarding resource transfer for climate change.”



— “This, however, is not surprising given the fact that the world community has been labouring over the transfer of \$100 billion per year since the last 15 years, without success. This kitty, however, has been given a new name — New Collective Quantified Goal (NCQG) — though without any flesh and blood in the form of money. The developed world is engaged in who all should contribute to this fund and the latest missive is that countries like China and Saudi Arabia should also be viewed as donors rather than recipients.”

— “The reason why China is being singled out is because it is the largest polluter and because its gross domestic product and per capita income has grown manifold in the last two decades.”

— “China, on the other hand, has opined that it is still a developing country according to the guidelines of the UNFCCC and that Article 9 (of the Paris Agreement) says that resource transfer has to take place from the developed to developing countries. Mercifully, India has not yet been called out, though there is a good probability that India, too, may be asked to contribute instead of being a recipient of climate funds.”

— “There are several actions that each country is expected to take in order to reverse the adverse effects of climate change but has faltered. The first thing which comes to one’s mind is the preparation of national adaptation plans (NAPs). The NAPs are nothing but action to be taken to respond to impacts of climate change. Unfortunately, only about 57 countries have submitted their NAPs so far”

EXTINCT HUMANS OCCUPIED THE TIBETAN PLATEAU 1,60,000 YEARS AGO

The Denisovans are an extinct species of ancient human that lived at the same time and in the same places as Neanderthals and Homo sapiens. Only a handful of Denisovan remains have ever been discovered by archaeologists. Little is known about the group, including when they became extinct, but evidence exists to suggest they interbred with both Neanderthals and Homo sapiens.

The scientists identified one rib bone as belonging to a new Denisovan individual.

The layer where the rib was found was dated to between 48,000 and 32,000 years ago, implying that this Denisovan individual lived at a time when modern humans were dispersing across the Eurasian continent. The results indicate that Denisovans lived through two cold periods, but also during a warmer interglacial period between the Middle and Late Pleistocene eras.

The research team studied more than 2,500 bones from the Baishiya Karst Cave on the high-altitude Tibetan Plateau, one of the only two places where Denisovans are known to have lived.

Their new analysis has identified a new Denisovan fossil and shed light on the species’ ability to survive in fluctuating climatic conditions — including the ice age — on the Tibetan plateau from around 200,000 to 40,000 years ago.

Bone remains from Baishya Karst Cave were broken into numerous fragments preventing identification. The team used a novel scientific method that exploits differences in bone collagen between animals to determine which species the bone remains came from.

The research team determined that most of the bones were from blue sheep, known as the bharal, as well as wild yaks, equids, the extinct woolly rhino, and the spotted hyena. The researchers also identified bone fragments from small mammals, such as marmots, and birds.



The team was able to identify that Denisovans hunted, butchered and ate a range of animal species.

Detailed analysis of the fragmented bone surfaces shows the Denisovans removed meat and bone marrow from the bones, but also indicate the humans used them as raw material to produce tools.

WORLD'S OLDEST CAVE PAINTING WAS CREATED AT LEAST 51,000 YEARS AGO

On the ceiling of a limestone cave on the Indonesian island of Sulawesi, scientists have discovered artwork depicting three human-like figures interacting with a wild pig in what they have determined is the world's oldest-known confidently dated cave painting — created at least 51,200 years ago.

The researchers used a new scientific approach to determine the minimum age of the newly disclosed painting inside the Leang Karampuang cave in the Maros-Pangkep region of South Sulawesi province by using a laser to date a type of crystal called calcium carbonate that formed naturally on top of the painting. The method is a significant improvement over other methods and should revolutionize rock art dating worldwide.

The researchers used the same dating method to reassess the age of another Sulawesi cave painting from a site called Leang Bulu' Sipong 4, also depicting a narrative scene, this time depicting apparent part-human, part-animal figures hunting pigs and dwarf buffalo. It turned out to be at least 48,000 years old, upwards of 4,000 years earlier than previously thought.

"We, as humans, define ourselves as a species that tells stories, and these are the oldest evidence of us doing that," Aubert said.

In the Leang Karampuang painting, the interaction between the human-like figures and the pig, a species still inhabiting the island, is somewhat cryptic.

"Two of these figures are holding objects of some kind, and at least one figure seems to be reaching towards the pig's face. Another figure is positioned directly above the pig's head in an upside down position," Brumm said.

PLAGUE: WHY EUROPE'S LATE STONE AGE POPULATION CRASHED

Around 5,000 years ago, the population in northern Europe collapsed, decimating Stone Age farming communities across the region. The cause of the 'Neolithic decline', has remained a matter of debate.

A new study, 'Repeated plague infections across six generations of Neolithic Farmers', published by the journal Nature on Wednesday, suggests that disease, specifically the plague, may have been the primary driver.

How was the study carried out?

The researchers involved in the study analysed DNA obtained from human bones, and teeth excavated from ancient burial tombs in Scandinavia — seven from an area in Sweden called Falbygden, one from coastal Sweden close to Gothenburg and one from Denmark.

The remains of 108 people — 62 males, 45 females, and one undetermined — were studied. Eighteen of them — 17% — were infected with plague at the time of death.



The researchers were able to chart the family tree of 38 people from Falbygden across six generations, spanning about 120 years. Twelve of them — 32% — were infected with plague. Genomic findings indicated that their community had experienced three distinct waves of an early form of plague.

What were the findings?

The researchers reconstructed full genomes of the different strains of the plague-causing bacterium *Yersinia pestis* responsible for these waves. They determined that the last one may have been more virulent than the others, and identified traits indicating the disease could have spread from person to person to cause an epidemic.

A later form of this same pathogen caused the Justinian Plague of the 6th century AD and the 14th century Black Death that ravaged Europe, North Africa, and the Middle East. Because the strains circulating during the Neolithic decline were much earlier versions, the plague may have produced different symptoms than witnessed in the epidemics millennia later.

The study demonstrated that the plague was abundant and widespread in the area examined. “This high prevalence of plague indicates that plague epidemics played a substantial role in the Neolithic decline in this region,” said Martin Sikora, geneticist at University of Copenhagen and co-author of the study.

The Neolithic, or New Stone Age, saw humans switch to settled farming and animal domestication, from a roving hunter-gatherer lifestyle. The Neolithic population crash in Northern Europe occurred from about 3300 BCE to 2900 BCE. By that time, cities and sophisticated civilisations had already arisen in places like Egypt and Mesopotamia.

The populations of Scandinavia and Northwestern Europe disappeared entirely, only to be later replaced by the Yamnaya people who migrated from a steppe region of present-day Ukraine. They are the ancestors of modern Northern Europeans.

RAIN INSIDE THE HOUSE

Q: After I take a hot shower and the hot, wet air from the bathroom combines with the cold air from the hall, why doesn't it rain in my house?

A: It probably does. Your house may not be big enough to contain an air mass capable of producing a long shower of rain, but depending on the size, temperature, and relative humidities of areas in your house and the amount of wet air, you are probably getting at least a trace of rain-like precipitation.

Look closely at your bathroom walls after your shower; often there will be beads of water on them that did not result from direct contact with the shower stream. This is most noticeable on your ‘foggy’ mirror. A raindrop or two may even fall on your head from the ceiling.

Like rain outside, this precipitation results from condensation of water vapour, where the warmer air meets a mass of colder air (a cold front) or, more commonly, when warm damp air touches cold walls. The resulting ‘sweating’ walls are a common problem in damp climates and anywhere that a basement contains air that is wetter and warmer than its walls. And in the days before frost-free refrigerators, ‘snow’ built up into glaciers in the freezer compartment for the same reason.



To fight sweating walls, dehumidifiers and ventilators will help, especially an outside vent for the warm wet air from the clothes dryer.

BABY BRAIN

Is pregnancy-related brain impairment also seen in fish?

New research reveals that pregnancy-related brain impairment is present in live-bearing fish, but instead of affecting learning and memory as expected from similar research on mammals, it appears to have a stronger impact on decision-making and sensory reception. There have been many studies into the detrimental impact of pregnancy on mammalian brains, sometimes called “baby brain” or “momnesia” in humans, revealing how the disruption of neurological processes like neurogenesis, or the creation of new neurons, can affect learning and memory. While most fish reproduce by laying eggs, some species are live-bearing, or viviparous, and carry their offspring internally before producing live young. Researchers found that while both pregnant and virgin fish were equally successful in cognitive tasks, pregnancy was found to compromise the fish’s ability in decision-making and to interpret scent in the water.

JUMPING GENES AND RNA BRIDGES PROMISE TO SHAKE UP BIOMEDICINE

The year was 1948. It had only been about half a century since scientists had rediscovered Gregor Mendel’s work on inheritance in pea plants. This year, a scientist working on the genetics of the maize plant would challenge the then prevailing concept that genes are stable and arranged in an orderly manner on the chromosome. Barbara McClintock at the Carnegie Institution found that some genes were able to move around within the genome. These genes were called mobile elements or transposons.

Prof. McClintock also made another significant observation: depending on where the mobile elements were inserted, they had the ability to reversibly alter gene expression. She used corn kernels’ colours as a surrogate to understand hereditary characteristics, and in this way figured out transposons moved about in the genome of the maize plant. She was awarded the Nobel Prize in Physiology or Medicine in 1983 for this work.

Between 1948 and 1983, researchers found transposons in an array of life-forms, including bacteriophages, bacteria, plants, worms, fruit flies, mosquitos, mice, and humans. They were nicknamed ‘jumping genes’.

‘Sleeping beauty’ transposon

The discovery of transposons revolutionised our understanding of genetics, in particular their role in enabling nature’s wondrous diversity. Transposons influence the effects of genes by turning “on” or “off” their expression using a variety of epigenetic mechanisms. They are thus rightly called the tools of evolution, for their ability to rearrange the genome and introduce changes.

More than 45% of the human genome consists of transposable elements. Just as they create diversity, they also create mutations in genes and lead to diseases. However, most of the transposons have themselves inherited mutations and have become inactive, and thus can’t move around within the genome.



Over the years, researchers have attempted to resurrect inactive transposons from the genomes of the animal kingdom, hoping that the results will be useful in biomedical applications like genetic correction to cure a disease or for gene therapy.

For example, in 1997, researchers studied the genomes of fish and reconstructed a transposon called “sleeping beauty” at the molecular level. This transposon became dormant in vertebrates millions of years ago. The researchers elegantly reprogrammed the synthetic avatar to work in human cells. In future, a similar synthetic transposon inspired by nature may be able to turn off a problem gene or over-express another to accentuate some desirable characteristic.

Researchers have already discovered several naturally occurring vertebrate transposons and continue to look for more.

HEPATITIS A VACCINATION WILL BE COST-EFFECTIVE IN KERALA: STUDY

With better sanitation and hygiene, hepatitis A infection in Kerala has been witnessing an epidemiological transition — the infection is shifting from early childhood to adolescents and young adults. The infection is mild in children younger than six years and in almost 70% of the cases, hepatitis A infection is asymptomatic in this age group. However, in older children, the infection is very often symptomatic and in rare cases can cause liver injury and even death.

Kerala has recorded hepatitis A outbreaks with great regularity in the past two decades. There has been at least one outbreak with many deaths each year since 2017, including 2024.

Since a single infection of hepatitis A leads to lifelong immunity, children infected when young are immune to hepatitis A virus as adults. However, due to better sanitation and hygiene, very often children in Kerala do not get infected with hepatitis A thus making them vulnerable to severe infections and even serious health problems when infected as adults. Vaccination is one way to reduce outbreaks and help reduce out-of-pocket expenditure.

A paper published recently in the journal PLOS ONE has found that hepatitis A vaccination of children in Kerala aged one year and adolescents aged 15 years using either a live, attenuated vaccine or an inactivated vaccine is cost-effective. While one dose is sufficient in the case of a live, attenuated hepatitis A vaccine, the inactivated vaccine requires two doses for full immunisation. Besides other factors, the cost-effective analysis took into account the cost of the vaccine, the number of doses needed for full immunisation, coverage needed, and the total number of individuals to be vaccinated in the two age groups — 460,000 children aged one year and 502,600 adolescents aged 15 years.

ZIKA VIRUS: THE NEED TO IMPROVE SURVEILLANCE AND VECTOR CONTROL

The Zika virus is making the news once again. At least 15 cases, including eight pregnant women, of Zika have been discovered so far in Pune, Maharashtra. In Karnataka, a 74-year-old who had Zika has died. State Health Department officials say the death was caused by other factors. Another suspected case in Karnataka is being investigated as well.

The Pune Municipal Corporation has said it has stepped up surveillance; the Karnataka Health Department has released guidelines on the virus for the public, and both States have urged members of the public to ensure there are no mosquito-breeding sites at their homes.



Meanwhile, the Union Health Ministry has issued an advisory to States to be vigilant; screen pregnant women, and strengthen entomological surveillance and intensify vector-control activities.

The Indian Council of Medical Research (ICMR) has asked States not only to increase testing for Zika but also to test patients with chikungunya and dengue-like symptoms who test negative for these infections for Zika, as per a news report.

As the monsoon continues over large parts of the country, creating ideal breeding grounds for mosquitoes, and with cases of dengue spiking as well, State administrations and members of the public need to step up mosquito-control measures to prevent transmission of diseases.

What is Zika virus?

Zika virus is a mosquito-borne virus first identified in Uganda in 1947 in a Rhesus macaque monkey, followed by evidence of infection and disease in humans in other African countries in the 1950s. Zika virus occurs through the bite of infected *Aedes* mosquitoes, mainly *Aedes aegypti*, which also transmits dengue and chikungunya. The *Aedes* mosquitoes usually bite during the day. Sexual transmission, transmission from mother to foetus and transfusions of blood and blood products are other routes of transmission.

How it manifests?

Most people infected with the Zika virus do not develop symptoms, the WHO says. Among those who do, they typically start 3–14 days after infection and are generally mild, including rash, fever, conjunctivitis, muscle and joint pain, and headache, which usually last for 2–7 days.

How is it diagnosed?

Zika virus may be suspected based on symptoms or the fact that the person is living in or visiting areas where Zika transmission has occurred. A diagnosis can only be given after a laboratory test. A recent report in *The Hindu* pointed to gaps in the tracking and surveillance of the virus, highlighting the fact that in March 2023, the Central Drugs Standard Control Organisation (CDSCO), India's apex agency for diagnostic approvals, confirmed that there was no approved diagnostic test for Zika. This limitation, the report said, hinders the country's ability to diagnose Zika. At present, samples are generally sent to a few select labs, including the National Institute of Virology, for confirmation. The NIV, a media report indicates, is flooded with samples, leading to delays in the issuing of reports.

What are the ill effects?

Zika virus infection during pregnancy, the WHO says, can cause infants to be born with microcephaly and other congenital malformations and can also cause preterm births and miscarriage. Microcephaly is a condition in which an infant's head is smaller than what is typical for their age and can be caused by the brain not developing properly. An estimated 5–15% of infants born to women infected with Zika virus during pregnancy have evidence of Zika-related complications, as per the WHO. Zika virus infection is also associated with Guillain-Barré syndrome, neuropathy, and myelitis in adults and children. Guillain-Barré syndrome is a rare condition that causes a person's immune system attacks the peripheral nerves.

Is there a vaccine?



No vaccine is as yet available for the prevention or treatment of Zika virus infection, the WHO says. The development of a Zika vaccine remains an active area of research.

A few studies have shown promising results. In India for instance, several companies are attempting to make a vaccine. In a study published in 2017, Bharat Biotech's "killed Zika virus vaccine" which uses an African strain showed 100% efficacy against mortality and disease in animal studies. Indian Immunologicals Limited, a wholly-owned subsidiary of the National Dairy Development Board said earlier this year that it was also working on developing a vaccine.

AIIMS ALZHEIMER'S EARLY DETECTION TEST: A PROMISE OF DIGNITY

For more than a century since it was discovered by German neuroscientist Alois Alzheimer, the disease named after him has boggled the scientific community. Global life expectancy at the time of the discovery was less than 35 years. With the average lifespan increasing to more than 70 today, Alzheimer's afflicts many more times the number of people today than when it was discovered. More than 55 million people worldwide over the age of 60 today suffer cognitive impairments and 60-70 per cent of them go on to develop the most corrosive form of dementia. Though research over the years has identified the characteristics of the disease, and in recent years, drug development has made some headway, questions remain about how best to treat Alzheimer's. In most parts of the world, including India, tests to diagnose the disease are undertaken only after the onset of symptoms. However, there is growing unanimity amongst scientists that the precursors to Alzheimer's begin to accumulate in the brain at least 10 years before the symptoms show up. That's why a blood test developed by researchers at AIIMS, Delhi, could be a significant breakthrough in Alzheimer's management.

The AIIMS researchers tested 90 people on six blood markers, the levels of which can indicate an early onset of Alzheimer's. The test can detect the biomarkers of the disease 10-15 years before it becomes full-blown. Alzheimer's develops over 15-20 years. An early diagnosis can help clinicians manage symptoms better — medicines that promise a cure for the milder form of the disease have not yet entered the treatment protocols in most parts of the world. Dementia screenings are particularly relevant for India where cognitive impairments are often confused with "natural" signs of ageing. Though diagnostic rates are improving, the disease remains poorly understood, even amongst sections of the medical community, and many patients live with symptoms that their near ones find difficult to understand. If it is successful in larger trials, the blood test developed by the AIIMS researchers could be a step towards easing the predicaments of the caregivers and giving patients a life of dignity.

Last year, another study by AIIMS Delhi researchers in collaboration with 18 other institutes in the country and the University of South California estimated that 7.4 per cent of senior citizens in India suffer from dementia. With the population of the elderly growing in the next decade, the disease could affect close to 1.7 crore Indians by 2035, the study warned. India needs a healthcare strategy for its elderly. The blood test developed by AIIMS researchers could be a key part of it.

WEIGHT LOSS IS AMONG THE 'BEST ROUTES TO DIABETES REMISSION'

Several organisations across the world have accepted the term 'Remission of Diabetes'. We now know that diabetes is a vascular disease requiring lifelong management. Most of us are also aware that the cost of treating diabetes is escalating, and hence society can no longer afford to overlook the pandemic of this lifestyle disease. Therefore, understanding T2DM (type 2 diabetes mellitus) remission becomes more of a priority.

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



Advancements in hypoglycemic drugs, lifestyle management through bariatric surgery, reduced caloric food intake, use of intestinal hormones, and drugs to reduce body weight have paved the way for the possibility of remission of diabetes. There is no doubt that successful diabetes remission of T2DM would relieve healthcare systems and ease the increasingly unsustainable socio-economic burden.

Understanding diabetes remission

The major pathological causes of diabetes are insulin resistance in skeletal muscles, liver, and pancreas caused by defective glucose transporters or beta cell dysfunction due to oxidative stress and high fatty acid content. According to the American Diabetes Association, diabetes remission refers to the reduction or normalisation of glycated haemoglobin (HbA1c of under 6.5%) for at least 3 months after cessation of any glucose-lowering drugs. Diabetes remission is not to be considered a cure for the disease; it just means the disease is not actively progressing.

Hence, patients in the remission phase no longer show symptoms or require medications.

Key strategies for remission

One of the most effective methods for achieving diabetes remission is weight loss. The diabetes remission clinical trial (DiRECT) study showed that about 46% of type 2 diabetes patients (with diabetes for less than 6 years and not on insulin) reached remission in 12 months with a structured weight management programme. People with diabetes who achieved a weight loss reduction of over 10 to 15 kg showed diabetes remission. People with diabetes for more than 10 years are less likely to achieve remission. The findings of a meta-analysis revealed that T2DM patients with a BMI less than 35 kg/m², benefited from bariatric surgery to achieve better remission and good glycaemic control. The rate of diabetes remission in patients who have undergone bariatric surgery is 56.6%.

The other key factor is lifestyle intervention. Dietary changes such as low-calorie and low-carbohydrate diets showed effective weight loss, leading to diabetes remission, by reducing the fat in the liver and pancreas. A weight loss of up to 12 kg in 2 years was reported in a non-randomised study.

There are, of course, plenty of medical interventions. The latest hypoglycemic drugs not only manage glycaemic control but also help in weight reduction. REMIT-sita (sitagliptin, metformin, and glargine) and REMIT-dapa (dapagliflozin, metformin, and glargine) studies showed greater efficacy in diabetes remission in patients with a short duration of diabetes, HbA1c under 7.5, and in the absence of comorbidities or diabetic complications. Drugs like GLP1-RA and tirzepatide (a dual agonist of GLP1 and GIP) help in 10-15% weight reduction and are efficient in diabetes remission.

Let's remember that diabetes remission requires continuous monitoring, as remission is just a state where diabetes is not currently present, but the risk of recurrence remains high. Diabetes can recur when weight is gained or due to stress or the decline in beta cell function and drugs that promote high blood sugar, like glucocorticoids and certain antipsychotic agents. Testing of HbA1c or another measure of glycaemic control should be performed annually.

A new paradigm in diabetes care

The role of healthcare providers is to develop personalised care depending on the patient's health status, preferences, and goals. Educating the patients on the importance of lifestyle changes like

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



calorie restriction and physical activity to attain weight loss. Regular monitoring of the blood glucose, weight, and any other necessary parameters. Depending on the reports, the medication should be adjusted.

Diabetes remission, or, is the latest revolution in diabetes care as its focus shifts from merely managing diabetes to strategies to eliminate the need for medication. Knowledge of remission can motivate patients to follow lifestyle modifications strictly. Therefore, a gradual dip in the burden of diabetes-related complications can be achieved. The importance of preventive care and early intervention can ultimately reduce healthcare costs and improve individual health outcomes.

Conclusion

In the future, type 2 diabetes management is likely to involve a step-wise approach towards remission of diabetes based on the patient's metabolic profile.

The concept of diabetes remission is a game-changer in the fight against type 2 diabetes.

While it requires commitment and significant lifestyle changes, the benefits of achieving remission are profound, offering a path to improved health and quality of life.

Combination therapy, including possibly multi-drug therapy, rather than monotherapy, will be the key feature of successful remission.

Remission will be seen as the primary aim, especially for prediabetes and newly-diagnosed T2DM patients, who are the two groups most likely to go into long-term remission with the least effort. Many long-term trials are required to continue this evolution.

Patients, healthcare providers, and policymakers must embrace and support these transformative approaches to diabetes care.



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