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INTERNATIONAL

JILL BIDEN MARKS U.S. REENTRY INTO UNESCO WITH A PARIS CEREMONY

The Stars and Stripes was hoisted up outside UNESCO's headquarters with the Eiffel Tower on the skyline to rousing applause and a rendition of the national anthem. Before the flag-raising, Ms. Biden made remarks about the importance of American leadership in preserving cultural heritage and empowering education and science across the globe. "I was honoured to join you today as we raise the flag of the United States, the symbol of our commitment to global collaboration and peace," Ms. Biden said. She said that this move was an example of President Joe Biden's pledge about "restoring our leadership on the world stage". "We are so proud to rejoin UNESCO," she proclaimed, acknowledging that "as a teacher I'm a little biased".

The United States had announced its intention to rejoin UNESCO in June, and the organisation's 193 member states earlier this month voted to approve the U.S. reentry. Tuesday's ceremony, which also featured a speech by UNESCO Director-General Audrey Azoulay, formally signified the U.S. becoming the 194th member — and flag proprietor — at the agency.

EXPRESS VIEW ON US-CHINA CLIMATE TALKS: WELCOME THAW

The talks last week between US climate envoy John Kerry and Chinese officials did not yield any agreement. They ended with Chinese President Xi Jinping reasserting that China will reduce carbon emissions at its own pace. Yet, the fact that the two highest GHG emitters have gone back to the negotiating table is a development of note. The talks had been suspended after the Speaker of the US House of Representatives, Nancy Pelosi, visited Taiwan, over which China claims sovereignty, last year. The two sides have indicated that they would continue to hold talks over cutting coal and methane use — a big sticking point in Sino-American climate ties. They have much work to do if global warming has to be contained with the Paris Pact's target of 1.5 degrees Celsius. China's climate targets are, by all accounts, consistent with a 3 degrees Celsius uptick in global temperatures above pre-industrial levels. The US's climate ambition would lead to a temperature increase of around 2 degrees Celsius.

US-China differences on climate predate the tensions over Pelosi's visit. Beijing has traditionally taken the developing country approach that asks rich countries to own up to their historic responsibility for climate change. Things began to take a nasty turn during the Trump years with the then-US President unfairly villainising China for the climate crisis. As part of its trade war on China, the US imposed high tariffs on Chinese clean energy products. The change of guard at the White House hasn't led to much change. China too has imposed strictures on technology exchanges with the US. A few days before Kerry's visit, Beijing included gallium and germanium, used in solar cells — as well as in the manufacture of a variety of electronic items — within the purview of its Export Control Law. The strictures on these rare earth minerals, over which China has market dominance, are slated to come into effect next month.

While their climate diplomats resumed negotiations, large parts of the US and China have been hit by a record-breaking heat wave. Meteorological reports have indicated the breaching of the 1.5 degrees Celsius target this year — though temporarily. Big power rivalry is holding up meaningful progress in mitigating global warming. In the weeks and months leading to the COP-28 in Dubai, the end of this year, Beijing and Washington must make their climate engagement more meaningful.



EXPRESS VIEW ON THE DISAPPEARING CHINESE MINISTER

Long before AI-created deepfakes, totalitarian societies made it impossible to trust the evidence of your senses. In *The Book of Laughter and Forgetting*, Milan Kundera provides an example: A photograph from February 21, 1948, shows Vladimir Clementis standing next to Klement Gottwald, the leader of Czechoslovakia's Communist Party. In 1950, Clementis is erased from the photograph, after he is charged with being a "deviationist" — essentially, the secular version of heresy used by scientific socialists to remove and cut inconvenient party colleagues to size. There are many differences between the Soviet-style communism of the mid-20th century and Xi Jinping's capitalist socialism in contemporary China. But Kundera's parable applies to both.

Qin Gang, who was recently seen as a dynamic young leader close to Xi, has been removed as China's foreign minister. For months, though, China watchers and the international media as a whole have been speculating about Qin's absence — or more accurately, his disappearance. He was not seen in public from June 25 until his sacking earlier this week. Officially, he was away for "health reasons". Unofficially, the rumours range from political intrigue to an extra-marital affair.

It is likely, of course, that the Qin Gang episode will fade from memory soon after it moves away from the headlines. After all, Orwellian disappearances and subsequent rehabilitations are par for the course in China: Tennis star Peng Shuai, Jack Maa, activist Chen Quishi, actress Zhao Wei — the list goes on. Each case seems a throwback to the opacity of the Cold War era in the so-called information age. But what if, as Kundera put it, "the struggle of man against power is the struggle of memory against forgetting"? It seems that struggle is a losing battle. In a time when the recent plights of refugees, migrants and minorities are forgotten in months, there is little chance that a cabinet reshuffle will leave much of an impression. And deepfakes are so much easier now.

FRACTURED MANDATE

Spain's parliamentary elections on Sunday show that the mainstream conservative and socialist parties remain the favourite choices of the electorate even when far-right parties are on the rise in other European countries. The ruling Spanish Socialist Workers' Party (PSOE), under the leadership of Prime Minister Pedro Sánchez, sought a fresh mandate based on the government's performance and promise of economic equity, while the opposition People's Party (PP) offered pro-business and investment policies. The PP won 136 seats, from 89 in the last election, but fell short of a majority in the 350-member lower House. The far-right, anti-immigrant Vox party, a potential coalition ally of the PP, won 33 seats, down from 52 four years ago. The PSOE, which was expected to be punished by voters, got 122 seats, two more from the last election. But the Socialists' coalition partner, Sumar, dropped from 38 to 31. Voters supported the Conservatives but not their potential far-right allies; they refused to punish the socialists, but voted down their leftist allies. This fractured mandate has left Spain in a political gridlock, pushing it into prolonged coalition building talks.

Europe has seen a clear shift towards the right. In southern Europe such as Italy and Greece, anti-immigrant and hard-right parties have secured victories in their most recent elections. Elsewhere in the continent, including France, far-right parties with neo-Nazi ties are on the ascent. But Spain's case has been different. The PSOE went to the polls with a relatively good record. Mr. Sánchez's government led the country out of the COVID-19 pandemic with an efficient vaccination campaign. When much of Europe was reeling under high inflation, partly due to the Ukraine war and the West's sanctions on Russia, Mr. Sánchez shielded the economy from the crisis — inflation



fell from 10.7% a year ago to 1.6% in June. The Left had also warned the electorate about the possibility of the Vox, whose members include supporters of the late fascist dictator, Francisco Franco, entering the government with the PP — it would have been the first entry of such a party into the government since Spain's democratic transition in the late 1970s. The PSOE campaign was focused on its achievements and voter apprehension about the far-right's entry seems to have helped the party avert the rout that most opinion polls had predicted. Given that no bloc has a clear majority, the focus is on the smaller regional parties, including the pro-independence ones in Catalonia and the Basque region. This gives Mr. Sánchez an edge in coalition building talks as he has a record of cooperating with regional parties.

CAMBODIAN PM HUN SEN TO STEP DOWN AFTER 4 DECADES

The former Khmer Rouge cadre has run the kingdom since 1985, eliminating all opposition to his power, with rival parties banned, challengers forced to flee and freedom of expression stifled.

His Cambodian People's Party (CPP) won a landslide victory in an election on Sunday with no meaningful opposition, taking 82% of the vote, paving the way for a dynastic succession to his eldest son. Election authorities disqualified the only serious challenger, the Candlelight Party, on a technicality ahead of the election.

The government hailed the 84.6% voter turnout as evidence of the country's "democratic maturity" but Western powers, including the United States and the European Union, condemned the poll as neither free nor fair. The UN's human rights chief Volker Turk added his own criticism on Wednesday, saying Opposition parties and media had faced "restrictions and reprisals" aimed at hindering free elections.

Mr. Hun Sen said Hun Manet, a 45-year-old four-star general, would take over as Prime Minister at the head of a new government on the evening of August 22.

DANGEROUS OVERHAUL

Benjamin Netanyahu, Israel's right-wing Prime Minister, scored a legislative victory on Monday when his coalition passed an important part of his judicial overhaul plan in the Knesset, but at a great cost. The controversial Bill was passed with the support of Mr. Netanyahu's 64 coalition lawmakers against zero, while the Opposition boycotted the vote and thousands protested outside Parliament. His coalition of right-wing and ultra-orthodox parties says the legislation, which would take away the Supreme Court's ability to review the government's "unreasonable" decisions, is to bring a balance between government and judiciary. Israel's polity has shifted to the right, putting governments, often led by right-wing or centre-right parties with support from far-right parties, at odds with the judiciary. Mr. Netanyahu's allies want to fix this contradiction through the judicial overhaul. But the problem is that bringing the judiciary, the only powerful constitutional check on the government, under government control could cause the existing institutional balance in Israel's polity to deteriorate, especially when far-right parties are on the ascent. This is what triggered the protests by workers, professionals and reservists (the backbone of Israel's military), who accuse Mr. Netanyahu of trying to undermine democracy.

For the far-right parties in the ruling coalition, curtailing the powers of the Supreme Court is the obvious way to expedite Israel's transformation and the subjugation of the Palestinians. Ministers such as Itamar Ben-Gvir and Bezalel Smotrich want more Jewish settlements in the occupied Palestinian territories and a crackdown on the "disloyal" Arab minority of the Jewish state. With



the new legislation, the government's actions cannot be nullified by the Supreme Court on the ground that they were "unreasonable". Also, this judicial and political crisis cannot be seen as insulated from the larger one that Israel has been grappling with. Israel, while hailed in the West as "the Middle East's only democracy", has two systems for its citizens and those living in the occupied and annexed regions, the West Bank and East Jerusalem. The judicial overhaul plan has bust the myth that Israel's democratic order would be protected irrespective of its brutal occupation of the Palestinians. It is not a coincidence that the overhaul's greatest supporters are also the greatest defenders of the occupation. The far-right wants to turn Israel into an authoritarian theocracy, with few checks and balances at home and unbridled expansion into the occupied land. But its push has also exposed Israel's faultlines, plunging it into its biggest crisis. Mr. Netanyahu might have pushed the Bill through the Knesset, but he has rendered Israel weaker.

SUBVERTING MANDATE

In the parliamentary elections in May, Thai voters sent a clear message to the country's conservative military establishment, which had wrested power from an elected government in 2014. The reformist Move Forward and the pro-democracy Pheu Thai parties emerged as the largest parties, while all the pro-establishment parties did poorly. Yet, the Thai military went after the architect of the Opposition victory, the 42-year-old Pita Limjaroenrat. During the campaign, he had promised to end the "cycle of coups", scrap the military-drafted constitution and amend the controversial lèse-majesté law, which criminalises any public criticism of the monarchy. His reformist views helped him connect with the masses and lead his party to victory, but also made him a target of the military. After the elections, eight Opposition parties, including the Move Forward and Pheu Thai, came together to form a bloc, which had a majority in the 500-member elected House. The bloc nominated Mr. Pita as their prime ministerial candidate. But in Thailand's 750-member bicameral Parliament (500 elected MPs and 250 Senators appointed by the military), a candidate needs the support of 376 lawmakers to form the government. In Mr. Pita's first attempt, he got only 13 votes from the Senate. Thailand's Constitutional Court also suspended him from Parliament in a case involving allegations that he had violated electoral laws by not disclosing his shares in a media company.

This is not the first time the establishment is going after popular parties. In 2019, the reformist Future Forward Party, which emerged as the third largest bloc, was dissolved and its leaders banned from politics. What the generals fail to understand is that the crackdown on pro-democracy parties has not helped sway public mood. The Move Forward emerged from this vacuum and became the largest party in Parliament in four years. Thailand has also seen widespread pro-democracy protests; though crushed by the junta, the embers of public resentment still burn. The May election results were an opportunity for the junta to cede power to a legitimate government. But by blocking the winner from forming the government and suspending him from Parliament, the generals have made it clear that they will not tolerate any call for reforms. This is a dangerous move that has taken Thailand a step closer to the Myanmar model, where the military coup in 2021 saw the arrest of democratically elected leaders, and civil war. The Thai Opposition should stay united in the face of the military's pressure tactics and continue to push the Senate to support the candidate who has the backing of the most elected lawmakers.



NATION

WHAT IS A STAPLED VISA, AND WHY DOES CHINA ISSUE THESE TO INDIANS FROM ARUNACHAL AND J&K?

India withdrew its eight-athlete wushu contingent from the Summer World University Games beginning in Chengdu on Friday (July 28) after China issued stapled visas to three athletes from the team who belong to Arunachal Pradesh.

Wushu is the Chinese term for martial arts. Two hundred and twenty-seven Indian athletes are participating in 11 other sports at the games that are held every two years, and are officially known as the FISU World University Games.

The Chengdu edition was originally scheduled for 2021 but was postponed because of the Covid-19 pandemic, and the original 2023 games, scheduled to be held in Yekaterinburg, were cancelled after Russia invaded Ukraine in February 2022.

What is a stapled visa?

A stapled visa is simply an unstamped piece of paper that is attached by a pin or staples to a page of the passport and can be torn off or detached at will. This is different from a regular visa that is affixed to the passport by the issuing authority and stamped.

China has made it a practice to issue stapled visas to Indian nationals from Arunachal Pradesh and Jammu and Kashmir. It says the visas are valid documents, but the Government of India has consistently refused to accept this position.

On Thursday (July 27), Ministry of External Affairs spokesperson Arindam Bagchi said the issuance of stapled visas was “unacceptable and we have lodged our strong protest with the Chinese side, reiterating our consistent position on the matter”.

Bagchi said India’s “long-standing and consistent position is that there should be no discrimination or differential treatment based on domicile or ethnicity in the visa regime for Indian citizens holding valid India passports”, and that “India reserves the right to suitably respond to such actions”.

Why does China do this?

Passports, visas, and other kinds of immigration controls reiterate the idea of a nation-state and its sovereignty which is inalienable and inviolable. A passport is the certificate of its holder’s identity and citizenship. Since nation-states reserve the right to control and regulate who enters or leaves their borders, a passport and visa entitle their holders to travel freely and under legal protection across international borders.

China disputes India’s unequivocal and internationally accepted sovereignty over Arunachal Pradesh. It challenges the legal status of the McMahon Line, the boundary between Tibet and British India that was agreed at the Convention Between Great Britain, China, and Tibet at the Simla Convention of 1914. It is this disagreement that lies at the heart of Chinese claims over the position of the Line of Actual Control (LAC), and its repeated transgressions into Indian territory.



China claims some 90,000 sq km of Arunachal Pradesh as its territory. It calls the area “Zangnan” in the Chinese language and makes repeated references to “South Tibet”. Chinese maps show Arunachal Pradesh as part of China, and sometimes parenthetically refer to it as “so-called Arunachal Pradesh”.

China makes periodic efforts to underline this unilateral claim to Indian territory, and to undermine the sovereignty of India over parts of Indian territory. As part of these efforts, it issues lists of Chinese names for places in Arunachal Pradesh — it has issued three such lists in 2017, 2021, and in April this year — and takes steps such as issuing stapled visas.

Since when has this practice gone on?

In his book ‘After Tiananmen: The Rise of China’, India’s former foreign secretary Vijay Gokhale noted that state-run Chinese media began to refer to Arunachal Pradesh as “South Tibet” from 2005 onward.

STILL INCOMPLETE

With a joint statement on economic cooperation, India and Sri Lanka outlined a forward-looking vision for their relations. The statement, entitled “Promoting Connectivity, Catalysing Prosperity: India-Sri Lanka Economic Partnership Vision”, released after talks between Prime Minister Narendra Modi and Sri Lankan President Ranil Wickremesinghe in Delhi last week, lays out the vision in five areas: maritime, air, energy, trade and people-to-people initiatives. New investments in maritime and air connectivity will involve developing ports and airports in Sri Lanka, resuming ferry services and expanding flight networks to connect Tamil Nadu and Sri Lanka’s Northern and Eastern Provinces. A major surge in energy connectivity will include developing renewable energy wind and solar plants in Sri Lanka. Both hope to increase trade, and continue Indian support for Sri Lanka’s economy that crashed last year and is slowly working out its debt restructuring process. A memorandum of understanding was signed to operationalise UPI digital payments in Sri Lanka and to designate the Indian Rupee as currency for trade. They also agreed to explore ways of enhancing tourism and cultural and religious travel, and educational collaboration.

While the vision statement revealed a comprehensive plan for the future, what it lacked was conspicuous: none of the written documents released during Mr. Wickremesinghe’s visit acknowledged previous commitments by Sri Lanka on honouring the 13A constitutional amendment for devolution of powers to the North and Eastern provinces, and for resolving the long-pending issues over arrest of Indian fishers. It was left to Mr. Modi to make a sharp appeal in his speech for devolution and the conduct of Provincial Council elections, and he emphasised the need to ensure a “life of respect and dignity” for the Sri Lankan Tamil community. In Colombo, the ruling SLPP that provides support for President Wickremesinghe made it clear that his government lacks the “electoral mandate” to discuss these issues, for long the cause of tensions between India and Sri Lanka. The fact that neither Mr. Wickremesinghe’s comments in Delhi, nor the joint statement referred to such crucial issues may be the bigger message from the meeting: that despite Sri Lanka’s other dependencies on New Delhi, the Indian government is no longer welcome to bring its historical concerns over the Tamil issue into bilateral negotiations. Regardless of the strong familial bonds between India and Sri Lanka, history has tripped up ties in the past, and any vision for the future that does not include an amicable resolution of these issues will be considered incomplete.



WILL G20 AGREE ON A JOINT COMMUNIQUE?

The story so far:

With about 50 days to go until the G20 Summit in New Delhi, Sherpas (senior members of the staff of the heads of state and government) and negotiators at various G20 ministerial meetings and working groups have been unable to issue a single joint communique thus far. Instead, given the stand by Russia and China to oppose the paragraphs on the war in Ukraine contained in the statements that have been issued till now, India has been forced to issue a series of “Chairman’s Summary and Outcomes Documents” at the various meetings. These include the three meetings of the all-powerful G20 Finance Ministers and Central Bank Governors, to ones on Tourism, Education, Labour, Crime and Digital Security and even the Space economy. Are there still chances of a joint communique or “Leaders Declaration” being issued at the G20 Summit in India on September 9-10?

Why does a joint communique matter?

Since its inception in 1999, and upgradation to a leader’s level summit in 2008, the G20 grouping of the world’s biggest economies has always managed to find a consensus within the countries and issue a joint declaration at the end of every summit. If that doesn’t take place in New Delhi this September, it would be an ignoble first for the grouping, and could even raise questions over whether the G20 is sustainable in its present form. After the Russian annexation of Crimea in 2014, G-8 leaders had suspended Russia, changing the grouping to G-7. However, the G20 summit in Brisbane, Australia that year managed to issue a joint declaration without mentioning the Crimean conflict, and even managed a “family photo” with all the leaders including Russian President Vladimir Putin. In 2022, the Indonesian G20 presidency faced tense moments as the declaration was negotiated until the very last moment of the summit. Mr. Putin didn’t attend, and no “family photo” was allowed, but it managed to issue a document. During its tenure as President, India wishes for the best possible outcome at the G20 summit, and hence its negotiators on the “Sherpa track”, who collate the final document, are putting sustained efforts into ensuring a resolution to the logjam over Ukraine.

Why has the current presidency continued with the ‘Bali Paragraphs’ in its documents?

Indian officials maintain that a lot of hard work went into the formulation of the “Bali Paragraphs”, and therefore they have been imported into India’s G20 documents. They say the Bali formulation can be divided into three parts — the references to the United Nations Security Council (UNSC) and United Nations General Assembly (UNGA) resolutions “deploring” Russia’s war in Ukraine, which are from the UN and cannot be modified. Second, the statement that “most members” strongly condemned the war in Ukraine, refers to the International Monetary Fund (IMF) conventions for “qualifiers” where “most” means 62.5% or 12 of the 20 G20 members. Third, the use of Prime Minister Modi’s phrase — “This era is not of war” — is universal and doesn’t refer to any one country or war. Meanwhile, the additional line that the G20 is not a forum for security issues, but for economic issues arising from security concerns, like the impact of the Ukraine war on fuel, food and fertilizer prices, is unimpeachable.

The Indian Sherpa Amitabh Kant has also made it clear that developing countries did not create the Ukraine conflict, nor is the war India’s priority at the G20. Instead, India wants to leave the intractable issues for the end, keeping the focus on the induction of the African Union as a member



of the G20, development goals, digital public infrastructure, gender-led empowerment, reform of multilateral development banks and other priorities.

Why are Russia and China opposing?

Russia and China oppose the language on Ukraine, even though it is taken from last year's Bali G20 document that they signed. Both the countries have now refused to endorse the "Bali Paragraph[s]" in every G20 meeting under India's presidency, albeit for different reasons. Russia says the language at Bali no longer holds true as it does not include increased U.S. and European military support to Ukraine, or the increased sanctions against Russia that followed. China has said that it doesn't believe the G20, essentially an economic forum, should discuss "geopolitical issues" as it hasn't in the past two decades, indicating the Bali statement was an exception. An added problem could be the footnote by South Africa in the latest meeting of G20 Labour Ministers in Indore which ended on Friday, that insists that "Sherpas have not concluded discussions" on the "Bali Paragraph[s]", indicating that unless this is resolved soon, the issues over Ukraine may see more pushback from other countries to India's hopes for a consensus. On the bright side, Russia, in the last two meetings, appears to have accepted the second, more generic paragraph from Bali that speaks about the problems of conflicts generally, indicating some progress.

What are the chances of a joint communique now?

With a number of ministerials including the 3rd Finance Ministers and Central Bank Governors meeting done, the Sherpa track will kickstart the draft "Delhi Declaration" negotiations from August 1, and try to nail all the areas of differences including U.S.-China tussles over debt sustainability, privacy issues over digital public infrastructure and so forth, and chip away at the most significant differences over the Ukraine war. Officials say, given the political nature of the Ukraine issue, as well as developments in the war on the ground changing the situation, there may be little point in finalising something that could get dated. As a result, until an alternative acceptable language is not hammered out, they have left a "placeholder" reference to "geopolitical issues" in the final G20 Leaders Declaration document being prepared, while they finalise the rest of the document on other issues.

In addition, Indian negotiators have been taking suggestions from other countries including its two other "troika" colleagues: Indonesia, which hosted the G20 in 2022, and Brazil that will host the G20 in 2024. A draft circulated by Brazil in June that suggested acknowledging the Bali consensus and "moving on" from the Ukraine conflict was rejected, as was a longer Russian alternative draft. Much will now depend on the heavy lifting by leaders including PM Modi.

And all eyes will be on whether Mr. Modi undertakes travel to Russia and Ukraine as Indonesian President Jokowi did last year, or if he is able to make progress at the BRICS Summit at the end of August in Capetown, given Brazil-Russia-India-China-South Africa are all members of the G20, not to mention, the last minute diplomacy he may have to exert closer to the G20 Summit itself.

ELUSIVE CONSENSUS

India and China have once again appeared to walk away from their latest high-level engagement with sharply different diagnoses of what ails their relations. During a meeting earlier this week in Johannesburg between National Security Adviser Ajit Doval and top Chinese diplomat and Politburo member Wang Yi (he heads the Communist Party's Central Foreign Affairs Commission and was re-appointed Foreign Minister after the sudden removal of his successor Qin Gang), Mr.



Doval highlighted India's concerns about the situation along the Line of Actual Control (LAC). China's actions, he said, had "eroded" the "public and political basis" of ties. He also stressed the need to "... restore peace and tranquillity in the border areas, so as to remove impediments to normalcy in bilateral relations". The Chinese readout, in contrast, emphasised the big picture, calling for the "early" return of ties "to the track of healthy and stable development". It also called on both sides to follow "an important consensus" that was, it revealed, reached by Prime Minister Narendra Modi and President Xi in Bali last year to stabilise ties. This claimed "Bali consensus" had not been previously disclosed by either side. The Ministry of External Affairs, which stated they only exchanged courtesies, has subsequently conceded that they also discussed the "need to stabilize bilateral relations".

Whether or not the leaders exchanged more than pleasantries in Bali, the contrasting claims from the latest meeting have only reinforced the need for the Modi government to more transparently lay out the state of relations with China, and especially along the border. Opacity and defensiveness have marked the government's responses since tensions began in April 2020 to any questions about the border or its broader approach to China, which appears increasingly rife with contradictions. Only this week, the Minister of State for Electronics and IT, Rajeev Chandrasekhar, told a British newspaper that the government welcomed investment from China. Trade with China boomed to record levels in 2020 and 2021 led by imports of Chinese machinery, while at the same time the government has banned more than 200 Chinese apps, including TikTok. Meanwhile, after 18 rounds of talks, there remains little clarity on the LAC situation and the continuing incursions by China in Demchok and Depsang, the last two remaining friction points. While the arrangements to set up buffer zones in five other points are welcome, the terms of the arrangements and withdrawals by both sides also remain shrouded in secrecy. As both sides continue to find a way to stabilise ties and restore peace, the public should be kept informed. Relations with India's biggest neighbour are far too important to be conducted in the shadows.

KEEPING LITERATURE ON VIOLENCE NOT A TERROR ACT, SAYS SC; GRANTS BAIL TO DUO

The Supreme Court on Friday granted bail to activists Vernon Gonsalves and Arun Ferreira, accused in the Bhima-Koregaon case. They had spent five years in jail. The court highlighted that merely holding literature propagating violent acts or participation in seminars will not constitute a 'terrorist act' under the draconian Unlawful Activities (Prevention) Act (UAPA), 1967.

The 54-page judgment also held that mere association or the professing of association with a terror organisation is not enough to attract the offence of "membership" of such an outfit. It held that the National Investigation Agency (NIA) has to "prima facie establish" that a person is associated with a terror organisation with the intention to further its terrorist activities. Only then can "appellants be brought within the fold of the offence relating to membership of a terrorist organisation", held a Bench headed by Justice Aniruddha Bose.

The case pertains to the Elgar Parishad conclave held in Pune on December 31, 2017, which was funded by Maoists, as per the Pune police. The inflammatory speeches made there led to violence at the Koregaon-Bhima war memorial in Pune the next day in which one person was killed, the police had alleged. Other activists arrested in the case were Sudha Bharadwaj, P. Varavara Rao and Gautam Navlakha. While Ms. Bharadwaj and Mr. Rao got bail earlier, Mr. Navlakha is under house arrest.

The NIA had produced letters and statements, literature and books allegedly recovered from the residences of the two activists. The agency had claimed that these writings contained "extreme



left-wing ideology and its application to India". "There is nothing against the appellants to prima facie establish that they had indulged in the activities which would constitute overawing any public functionary by means of criminal force or the show of criminal force... Mere holding of certain literature through which violent acts may be propagated would not ipso facto attract the provisions of Section 15(1)(b) [terrorist act]," Justice Bose, who authored the judgment, held. "Considering the fact that almost five years have elapsed since they were taken into custody, we are satisfied that the appellants have made a case for grant of bail," the judgment reasoned. Imposing bail conditions, the court directed them to surrender their passports.

NEVER-ENDING SAGA

The legal wrangling between the Centre and the Government of the National Capital Territory (NCT) of Delhi over the contours of their respective powers is a never-ending saga. In the latest round, the legality of the recent ordinance promulgated by the President of India to create a new scheme to regulate services in Delhi will be scrutinised by a Constitution Bench. It will be the third such five-member Bench to examine the respective powers of the two warring entities in the last few years. The crux of the issue is that the ordinance has sought to nullify a recent Constitution Bench verdict that ruled that the subject of 'Services', covered under Entry 41 (State List), will fall under the executive and legislative domains of the Delhi government, and not that of the Centre. The Court's earlier reasoning was simple: Article 239AA, which governs the affairs of the NCT of Delhi, excluded only three subjects from the Delhi government's purview — police, public order and land — and that it could exercise control over the remaining subjects. As 'Services' was not one of the excluded subjects, it upheld the Delhi government's remit over appointments, postings and transfers. It ruled that any attempt to expand the Centre's ambit by excluding the subject of services would go against the constitutional scheme of Delhi's governance.

The three-judge Bench that referred the ordinance matter to a Constitution Bench has noted that the creation of a new 'Authority' to regulate 'services' effectively amends Article 239AA of the Constitution because it becomes a fourth subject in the list of excluded ones. However, this may not necessarily invalidate it. Clause 7 of Article 239AA allows Parliament to enact laws "for giving effect to, or supplementing" the Article. Further, it stipulates that such a law would not be deemed an amendment to the Constitution, even if it has such an effect. While the Court has conceded Parliament's power to enact such a law, it has indicated that it can examine whether the exercise of such power is valid, especially when it has the effect of excluding 'services' completely from the elected Delhi regime's ambit. The Court has also noted a contradiction: while it appears from one clause that the existing governance structure of Delhi cannot be altered, another clause seems to allow this. This, it says, requires a ruling. On the legal side, the larger Bench may be able to delineate the contours of Parliament's power to make laws under Clause 7, and rule whether while exercising such a power, it can abrogate the governance principles of Delhi. However, the tussle involving politics and personalities is unlikely to end soon.

WITH MODI SET TO FACE HIS SECOND NO-TRUST VOTE, A LOOK AT THE HISTORY OF NO-CONFIDENCE MOTIONS

The Lok Sabha on Wednesday accepted a no-confidence motion against the Narendra Modi government that was moved by the Congress to mount pressure over the Manipur issue. This will be the 28th no-confidence motion in independent India's history. To date, the passing of only one of these motions led to the fall of a government (Morarji Desai-led administration in 1979).



In 1952, the Rules of the Lok Sabha provided that a no-confidence motion could be moved with the support of 30 MPs (the number now stands at 50). However, not a single no-confidence motion was moved during the term of the first two Lok Sabhas.

In 1963, during the third Lok Sabha, the first no-confidence motion was moved by Acharya J B Kripalani against the Jawaharlal Nehru government. The debate on the motion lasted 21 hours and over four days, with 40 MPs participating. In his reply, Nehru remarked, "A no-confidence motion aims at or should aim at removing the party in government and taking its place. It is clear in the present instance that there was no such expectation or hope. And so the debate, although it was interesting in many ways and, I think profitable too, was a little unreal. Personally, I have welcomed this motion and this debate. I have felt that it would be a good thing if we were to have periodical tests of this kind."

The next no-confidence motion was moved roughly a year later in 1964 by N C Chatterjee, an Independent MP, against Prime Minister Lal Bahadur Shastri. This motion was debated for the longest time across all instances of discussions on the no-confidence motion: 24 hours.

While moving his motion, Chatterjee had said, "There is a crisis in every sphere. Honestly, there is a crisis in social, political, economic and other spheres and for all this I hold this government mainly responsible."

Between 1964 and 1975, the Lok Sabha debated 15 no-confidence motions. Three were against Shastri and 12 against Indira Gandhi. Indira went on to face three more no-trust motions between 1981 and 1982. However, none of these was successful in dislodging a government. CPM MP Jyotirmayi Basu moved a no-confidence motion against Indira four consecutive times — in November 1973, May 1974, again two months later in July 74, and May 1975.

The first government to be dislodged

The first no-confidence motion that led to the fall of a government was moved by Y B Chavan of the Congress in 1979 against the government of Prime Minister Morarji Desai. After a nine-hour debate over two days, Desai resigned before the motion could be put to vote. Desai also saw a no-confidence a year before, in 1978, moved by CM Stephen of the Congress faction led by Indira.

Since then, every Prime Minister has been able to defeat a no-confidence motion. Rajiv Gandhi faced one in 1987 which he defeated by a simple voice vote because of his overwhelming majority in Lok Sabha. However, P V Narasimha Rao had two close calls during his term in the 10th Lok Sabha. The first motion against him was moved by Jaswant Singh, which he defeated by 46 votes. Rao did not face any trouble in defeating the second one, moved by Atal Bihari Vajpayee. The third no-confidence motion that Rao defeated with a margin of 14 votes was marred by controversy. Jharkhand Mukti Morcha MPs were taken to court for having accepted bribes to cast their vote to defeat the motion.

Before this, the last no-trust motion was in 2018, when then Andhra Pradesh Chief Minister Chandrababu Naidu's Telugu Desam Party (TDP) quit the National Democratic Alliance (NDA) over the demand for special category status for his state.

After a 12-hour debate in that year's Monsoon Session, on July 20, the Modi government defeated the no-confidence motion in the Lok Sabha by 199 votes. While 126 members supported the motion, 325 MPs rejected it. The day-long session in the Lower House saw the government and



the Opposition trade charges and a moment of drama when Congress president Rahul Gandhi, after a blistering speech, walked over to Modi and embraced him.

Terming the no-trust vote against his government the result of the Opposition's "arrogance", Modi earlier called on all parties to dismiss the move and accused the Congress of working with the mindset of "Modi hatao (remove Modi)". Responding to the debate on the motion, he said some people were indulging in "negative politics." He also took a dig at Rahul for asking him to stand up for a hug after walking across to his chair in the Lok Sabha, saying the then Congress president appeared to be in a hurry to occupy his seat.

"Only the electorate of the country can decide his fate and make him sit on his chair," Modi said, before asking, "What is the hurry?" Gandhi was present in the House when the Prime Minister made the statement.

Before that, in 2003, Prime Minister Vajpayee defeated a no-confidence motion moved by Sonia Gandhi.

NEEDLESS MOVE

It comes no more as a shock or surprise if the Supreme Court is seen as deferring excessively to the government's wishes. The order allowing Sanjay Kumar Mishra, head of the Enforcement Directorate (ED), to continue till September 15 at the Centre's request is needlessly accommodative. It was only on July 11 that the Court declared illegal the extensions given to Mr. Mishra in 2021 and 2022. At the same time, he was permitted to continue till July 31 to ensure a smooth transition. Yet, without any submission that the process to select his successor has been set in motion, the Court has invoked an undefined "larger national interest" to allow him to go on up to September 15. It was a self-serving application in the first place. The ostensible reason that the government finds his services indispensable is that he is helping the country's efforts to demonstrate its framework to counter money laundering and the financing of terrorism during a country review before the Financial Action Task Force (FATF). The multi-lateral body adopts a mutual evaluation system and India's ongoing review will go on until June 2024, when the final evaluation report may be considered at a likely plenary discussion on its compliance status. The government sought an extension of his services until October 15, presumably because the country's agencies and institutions may be ready by then for an on-site visit by an FATF delegation.

As the agency that administers the law against money laundering, the ED may have a key role in preparing the country's presentation, but it is difficult to believe that the process depends on one individual. Even if it were so, nothing prevented the government from utilising Mr. Mishra's services for FATF purposes alone, while leaving the directorate's routine activities under his successor. In any case, various agencies and authorities are involved in framing the country's policies on money laundering and terrorism financing. It is unfortunate that the Court did not countenance arguments that highlighted these points. It did raise questions as to how one person could be indispensable, but ultimately chose to allow him to continue for some more time. One can understand the argument that the country's image depends on a positive FATF evaluation, but the claim that not giving Mr. Mishra an extension might result in a "negative image" is quite incomprehensible. India's credentials will be evaluated on its laws, systems and compliance with global standards and not on who prepared the report. The Court's permissiveness detracts from its resolve to hold the government to account for actions that it had itself declared illegal.



UNITING THE HOUSE

Both the Opposition led by the Congress and the ruling Bharatiya Janata Party (BJP) say they want a parliamentary debate on Manipur, but they are unable to agree on a mechanism to do it. The abhorrent violence, including repeated incidents of sexual violence against tribal women in the State, should have brought the government and the Opposition together; instead, they are unable to even debate the issue. The Opposition has insisted that any discussion must begin with a statement by Prime Minister Narendra Modi, who would not commit to that. Home Minister Amit Shah said the government was willing to discuss the issue and sought the cooperation of the Opposition, which saw the outreach as an attempt to shield Mr. Modi. The Opposition has now moved a no-confidence motion against the government as a way of forcing Mr. Modi to speak on the issue. Considering how he has responded until now, that might be a bit too optimistic. The discussion on the no-confidence motion in the Lok Sabha is likely to be a continuation of the obfuscation of the issue by the BJP and the persistent demand by the Opposition. Meanwhile, in the Rajya Sabha, the Opposition continues to demand a discussion followed by a statement by the Prime Minister.

The demand for a comprehensive statement by the Prime Minister is legitimate, but the Opposition must understand that it serves no purpose if the outcome is no discussion. It must seize whatever opportunity it gets for a discussion in Parliament, and take the protest to public places outside. The BJP's response to the horror in Manipur has been to equate it with crimes in Congress-ruled States, which is difficult to sustain. For moral and strategic reasons, the turmoil in Manipur is a threat to the country's security, integrity, and social harmony; it is a threat that calls for national unity. It is a sad moment in Indian democracy that its politics remains partisan even in the face of such human suffering, ethnic violence and the breakdown of law and order in a sensitive border State. Congress President Mallikarjun Kharge has written to Mr. Shah saying that the government cannot be seeking the Opposition's cooperation while the Prime Minister is likening it to extremist outfits. Labelling critics as anti-national or unpatriotic may be politically convenient, but this predictable response in the BJP toolkit is turning out to be an impediment to national unity. It is time Mr. Modi called for healing in Manipur, reassured the scared victims of the State and set an example by holding the perpetrators accountable. And there is no better place than Parliament to make it all clear to the country and the world.

MANIPUR VIDEO OPENS NEW FRONT IN NET BAN DEBATE

The May 4 video from Manipur showing two Kuki-Zo women being stripped and paraded by a mob, which went viral, has opened a new front on the debate over the fight against Internet shutdowns. Opponents of shutdowns, such as civil rights groups, now argue that on top of having a massive effect on work, education, and daily life, shutdowns can prevent information on atrocities from being discovered.

Security forces and experts have, however, arrived at a completely opposite conclusion: to them, the video, which went viral two months after it was recorded, vindicates the need for "calibrated and nuanced" shutdowns in such situations "limited in time period and space", as their dissemination could further inflame the situation.

To rights groups like the New Delhi-based Internet Freedom Foundation (IFF) and the Software Freedom Law Center (SFLC), which have always held that blanket communications shutdowns are a disproportionate measure, the viral video cements the case against imposing such



restrictions. The video shows “how Internet shutdowns, instead of curbing spread of violence, are in fact a tool that helps evade accountability for heinous human rights violations”, the IFF said in a statement.

A retired police officer told The Hindu that while Internet shutdowns cannot be “ham-handed”, there is a special need to stop such videos and content from spreading, as it is resulting in retaliatory violence and then leading to an escalating spiral.

“The touchstone for this is the interest of the public. The public is supposed to be informed; everything should be transparent. But whether this transparency is going to further ignite the situation is the question. The video may be fake or true. Irrespective of that, if it is capable of inflammatory or incendiary potential, I think it should be taken down because it is likely to lead to greater problems and does not help the public,” he said.

However, the officer acknowledged that this works only when authorities are actively trying to control the law and order situation. He said that in the interest of transparency, the information can then be released to the public in a controlled and calibrated manner “at a later stage”.

On misinformation

But amid this, as far as Manipur is concerned, a lot of the misinformation being spread and consumed within the State is coming from traditional local media (television and newspapers). Once published, these are reaching people through channels other than the Internet, albeit slower than if the Internet was freely made available.

The tension between the real-time documenting of the situation on ground in Manipur and the ramifications it could have within the State is defined by another complication: the SFLC has argued that the availability of connectivity defines the response of society, and in the absence of this connectivity, the situation in Manipur could stay on the boil.

“The fact that an event that occurred on May 4 in the State has now been taken cognisance by the apex court on July 20 shows how the reporting of events has been hampered by the shutdown, thereby preventing appropriate responses from the various arms of the government and civil society,” the SFLC said.

THE ‘FREE MOVEMENT REGIME’ ALONG THE INDIA-MYANMAR BORDER, AND WHY IT HAS COMPLICATED THE VOLATILE SITUATION IN MANIPUR

The illegal migration of tribal Kuki-Chin peoples into India from Myanmar is one of the key issues in the ongoing ethnic conflict between Meiteis and Kukis in Manipur.

While the Meiteis have accused these illegal migrants and the alleged “narco-terror network” along the Indo-Myanmar Border (IMB) of fomenting trouble in the state, the Kukis have blamed the Meiteis and Chief Minister N Biren Singh, a Meitei himself, of using this as a pretext for “ethnic cleansing”. Amid this charged and sensitive debate in the state, questions have been raised on the Free Movement Regime (FMR) that facilitates migration across the IMB.

What is the Free Movement Regime on the IMB?

The border between India and Myanmar runs for 1,643 km in the four states of Mizoram, Manipur, Nagaland, and Arunachal Pradesh. The FMR is a mutually agreed arrangement between the two



countries that allows tribes living along the border on either side to travel up to 16 km inside the other country without a visa.

The FMR was implemented in 2018 as part of the Narendra Modi government's Act East policy at a time when diplomatic relations between India and Myanmar were on the upswing. In fact, the FMR was to be put in place in 2017 itself, but was deferred due to the Rohingya refugee crisis that erupted that August.

But why was such a regime conceptualised?

The border between India and Myanmar was demarcated by the British in 1826, without seeking the opinion of the people living in the region. The border effectively divided people of the same ethnicity and culture into two nations without their consent. The current IMB reflects the line the British drew.

People in the region have strong ethnic and familial ties across the border. In Manipur's Moreh region, there are villages where some homes are in Myanmar. In Nagaland's Mon district, the border actually passes through the house of the chief of Longwa village, splitting his home into two.

Apart from facilitating people-to-people contact, the FMR was supposed to provide impetus to local trade and business. The region has a long history of trans-border commerce through customs and border haats. Given the low-income economy, such exchanges are vital for the sustenance of local livelihoods. For border people in Myanmar too, Indian towns are closer for business, education, and healthcare than those in their own country.

So why is the FMR being discussed critically?

Although beneficial to local people and helpful in improving Indo-Myanmar ties, the FMR has been criticised for unintentionally aiding illegal immigration, drug trafficking, and gun running.

The Indo-Myanmar border runs through forested and undulating terrain, is almost entirely unfenced, and difficult to monitor. In Manipur, less than 6 km of the border is fenced.

Since the military coup in Myanmar on February 1, 2021, the ruling junta has launched a campaign of persecution against the Kuki-Chin peoples. This has pushed large numbers of Myanmarese tribals across the country's western border into India, especially into Manipur and Mizoram, where they have sought shelter. Mizoram, where a large section of the population has close ethnic and cultural ties with people across the border, has set up camps for more than 40,000 refugees, despite protests from the Union Ministry of Home Affairs.

Manipur too has received a chunk of illegal migrants over the past year and a half. A committee set up by the state government to identify such migrants recently put their number at 2,187. Last September, 5,500 illegal immigrants were caught in Moreh, and 4,300 were pushed back, sources said. Biometrics of these individuals have been recorded.

Earlier this week, Manipur Chief Secretary Vineet Joshi wrote to the Assam Rifles, expressing concern over reports of 718 new infiltrations from Myanmar, and asked the paramilitary force to identify and deport them.

The Manipur government has alleged that village chiefs have been illegally settling migrants from Myanmar in new villages in the hills, leading to deforestation. An eviction drive against these new



villages became the flashpoint between Kukis in the hills and the government this March, leading to violence in the state. The Kuki and Naga peoples live in the hills that surround the Imphal valley, whereas the valley itself is home to the majority Meiteis.

On May 2, a day before the violence erupted in Manipur, Chief Minister Biren Singh said at a press conference in Imphal: “Illegal immigration from Myanmar to Manipur is such that we have so far detained 410 people from that country who have been staying in the state without proper documents. There is an additional 2,400 of them seeking shelter in detention homes along the border areas...who have fled Myanmar...”

He added: “We have reasons to believe that there must be many more Myanmarese residing illegally in Manipur... In the larger interests of the nation and the state and for security purposes, I appeal to the people residing in the border areas where infiltration can take place to cooperate so that details of such immigrants can be recorded.”

Is there a problem of drug trafficking or terrorism related to the FMR?

According to a paper published by Anuradha Oinam of the Centre for Land Warfare Studies (CLAWS), several insurgent groups such as the United National Liberation Front (UNLF), People’s Liberation Army (PLA), the United Liberation Front of Assam (ULFA), National Socialist Council of Nagaland (NSCN), and small groups of Kukis and Zomis have built camps in Sagaing Division, Kachin State, and Chin State (in Myanmar).

India-Myanmar Border (Source: Manipur CMO)

“They took shelter there, obtained arms, trained cadres, and, most importantly, engaged in illegal activities such as smuggling drugs and selling weapons to raise funds. This is possible because of the porous borders and frequent misuse of FMR. Therefore, managing and administering the border areas effectively is pertinent for reducing drug trafficking and illegal cross-border movement on unfenced borders,” the paper said. (Revisiting Free Movement Regime (FMR): Challenges and Implications, November 2022)

Data from the Manipur Chief Minister’s Office show that 500 cases were registered and 625 individuals were arrested under the Narcotic Drugs and Psychotropic Substances (NDPS) Act in Manipur in 2022. A large quantity of narcotics, including heroin, opium, brown sugar, and ganja, crystal meth and yaba (methamphetamine and caffeine), and prescription drugs such as the stimulant pseudoephedrine and analgesic spasmoproxyvon, were seized, several thousand acres of poppy were destroyed during the same period. The value of the drugs seized or destroyed is estimated to have been more than Rs 1,227 crore in the international market.

So should the FMR be removed?

The regime has been reviewed from time to time, and most experts agree that the FMR needs better regulation. As the crisis in Myanmar escalated and the influx of refugees increased, India suspended the FMR in September 2022.

Given the interests of the local population, however, neither the complete removal of the FMR nor full fencing of the border may be desirable. Livelihoods will be impacted, and essential travel for health care and education may be hit. Oinam’s paper argued that “it is imperative for New Delhi to tackle the issue by pursuing ‘killing the snake without breaking the stick’ approach.”



Sources in the security establishment said it is not easy to plug illegal immigration or drug trafficking across an unfenced border in treacherous terrain. “Even with robust patrolling and intelligence, people do sneak through, especially when there is no hostility towards the immigrant on our side. FMR or no FMR, it is not an easy task. And all borders, even the fenced ones, are struggling to deal with drug trafficking,” a senior officer said.

JHARKHAND ISSUES PESA DRAFT RULES FOR CONSULTATIONS

The Jharkhand government on Wednesday published draft rules for wide-ranging public consultation for implementing The Provisions of the Panchayats (Extension to Scheduled Areas) Act — or PESA — enacted in 1996 to ensure self-governance through gram sabhas for people living in Scheduled Areas.

In Jharkhand’s case, Scheduled Areas refers to areas identified by the Fifth Schedule of the Constitution. In Jharkhand, 13 of 24 districts are under 5th Schedule.

PESA recognises the right of tribal communities in Scheduled Areas to govern themselves through their own systems of self-government. It acknowledges their traditional rights over natural resources.

According to the draft Jharkhand Panchayat Provisions (Extension to the Scheduled Areas) Rules, 2022, published through a gazette notification on Wednesday, resolving traditional and family disputes, hearing certain cases under the IPC and having fundamental responsibility of maintaining peace and order in view of the principles of the Constitution are among rights of gram sabhas under 5th Schedule areas in the state,

The draft rules have mandated eight standing committees, including for Education and Social Justice, to be working under the gram sabha, which will have at least 50% women and a minimum of 40% people from Scheduled Tribe (ST) communities. The rules mention, for instance, that the Education and Social Justice Committee will mainly work for “education, economic uplift of Scheduled Castes, Scheduled Tribes as well as weaker sections [of society] such as specially abled and primitive tribes, providing protection from social injustice.”

On the traditions and customs, the rules say: “The Gram Sabha shall maintain the customary law, social and religious practices of the Scheduled Tribe communities residing in its area and for their protection will take necessary steps. The rules issued by the State Government in relation to the rights and responsibilities of the Panchayats will be in accordance with the social, religious and traditional management practices of the Scheduled Tribes.”

The rules say the gram sabha concerned will be the operator of the “sand ghat” (where sand is mined), or can use it for local needs at its own level.

They mention that these gram sabhas will have the fundamental responsibility of maintaining peace and order in their area of jurisdiction, keeping in view the Constitution, and the rules framed by the government. On hearing the disputes, the draft rules say: “The Gram Sabha will be able to hear the issues mentioned in Parishist 1 (Appendix) of the Indian Penal Code, 1860.” In view of “serious crime-related issues”, gram sabhas will “immediately inform the nearest police station in-charge”.

However, it is not clear from the draft rules what the issues under relevant IPC sections are that the gram sabha may or may not hear.



EXPRESS VIEW ON KERALA POLICE GOING AFTER SOUND SYSTEM: MIC DROP

This is the story of Microphone and Amplifier, and how they narrowly avoided the frightful fate of being thrown into gaol, shackled and silenced. The tale begins earlier this week, on a muggy day in Thiruvananthapuram, at the condolence meeting for the late Oommen Chandy which was organised by the Kerala Pradesh Congress Committee. The duo had been employed for the day, their job being to help attendees express and convey to a large crowd their grief at the loss of one of the state's tallest political leaders. The heartfelt messages and rousing speeches no doubt touched Mic, to the point where, as the state's current chief minister, Pinarayi Vijayan, began his speech, Mic let out an anguished groan.

What followed astonished not only Mic and Amp, but all those present. The cops, seeing in the interruption of the Chief Minister's speech a deliberate slight, swooped down and filed an FIR under the Kerala Police Act section 118(e), which deals with grave violations of public order or danger. The two friends were seized and "unknown persons" were charged, all because Mic did what his brethren around the world do, before kings and knaves alike. It was a victimless and, more importantly, criminal-less incident and, with the chief minister himself intervening, the cops ultimately decided not to compound the absurdity of the situation and closed the case.

Like all stories, this one too has a moral, particularly for the overzealous cops at the scene. Free speech, whether in the form of a written address delivered by the highest in the land or an inadvertent exclamation by one at the opposite end of the power spectrum, is sacred and must be protected. Let a groaning microphone have its say.

WHY TRADE UNIONS IN KERALA ARE OPPOSING CENTRE'S POWER SECTOR REVAMP SCHEME

The Kerala government is facing trouble over the Centre's Revamped Distribution Sector Scheme (RDSS), which envisages pre-paid smart electricity meters in households and revamping the power distribution network in the country.

Last month, the CPI(M) politburo demanded that the Centre scrap the project, alleging it would lead to the privatisation of the electricity sector and increase the financial burden on the poor and the farmers. Also, trade unions in Kerala affiliated to both the CPI(M) and the Congress, which have a significant say in the Kerala State Electricity Board (KSEB), are opposing the scheme.

The RDSS project

The Centre has launched the RDSS with an outlay of Rs 3,03,758 crore. The project has an estimated gross budgetary support of Rs 97,631 crore from the Union government for the duration of five years, from FY 2021-22 to FY 2025-26.

The project has two components: revamping of the distribution network, and smart meter implementation. Power lines and distribution systems will be modernised, while financial assistance will be given to distribution companies (in Kerala, it is KSEB) for the upgradation of the distribution infrastructure and for the installation of prepaid smart consumer meters.

The smart meters are meant to facilitate the reduction of distribution losses and enable automatic measuring of energy consumption. The installation of the pre-paid meters is to be done through



the TOTEX (total expenditure, including capital expenditure and operational expenditure) model, with public-private participation.

The bone of contention

Kerala has submitted to the Centre a project of Rs 3,800 crore for distribution revamp and Rs 8,200 crore for smart meters.

Early this year, the KSEB invited tenders for the first phase of the revamp and for 37 lakh prepaid smart meters. A single agency was to be contracted for supplying, maintaining and operating the metering infrastructure.

However, no final decision has been taken, amid protests from the trade unions.

Trade unions are opposing the TOTEX model, in which a private firm installs and maintains smart meters. The private agency will recover the cost incurred in instalments.

The unions fear that the smart meter system will thus pave the way for the privatisation of power distribution in the state.

KSEB, meanwhile, has argued that it will get financial assistance from the Centre only if the project is implemented in TOTEX mode.

Alternative proposed

Those opposing the TOTEX mode claim that the state should manufacture smart meters using the technology developed by the central government institution Centre for Development of Advanced Computing (C-DAC), which is willing to share the know-how. This will also help bring down the cost of the smart meters significantly, from Rs 9,500 per unit under the TOTEX mode.

KSEB, however, says this is not feasible.

MOON MISSIONS OFFER TOUGH TESTS – LANDERS, THE TOUGHEST

Space is hard. Moon missions are a testament to this phrase. Data show that historically, over 40% of moon missions have failed. If we consider only those missions which involved a robotic lander (a spacecraft performing a controlled landing on the lunar surface), the failure rate sharply increases to over 60%. The failure rate of 'sample return' missions, which collect samples from the moon and bring them back to the earth, is even higher at 67% as such missions are complex and riskier.

The Indian Space Research Organisation (ISRO) is no stranger to this fact. In September 2019, 'Vikram', the lander of the Chandrayaan 2 mission, lost contact with the earth and went blank minutes before lunar touchdown. The mission of the lander and the rover 'Pragyan' was declared a failure. The orbiter mission was a success as the orbiter was placed in the intended orbit.

Chandrayaan 3, largely a replica of Chandrayaan 2, was launched by ISRO on July 14 and is expected to land on the moon on August 23-24 this year. Chandrayaan 3's lander now has stronger legs, enhanced power, and an upgraded landing sequence, with which it aims to soft land on the moon. Lander missions are among the hardest to execute.



INS KIRPAN DECOMMISSIONED FROM INDIAN NAVY, HANDED OVER TO VIETNAM AS A PRESENT

Calling upon the Vietnam People's Navy (VPN) to closely examine and explore the vast potential that the Indian shipbuilding industry holds, and stressing that it is the best value-for-money proposition they can find, Navy chief R. Hari Kumar on Saturday said that India's indigenous shipbuilding prowess is an "assurance to our friends and partners" that the Indian Navy is capable and ready to support collective security needs in the region. He said this while speaking at the ceremony for decommissioning of the indigenous missile corvette INS Kirpan after 32 years in the Indian Navy, and was handed over to Cam Ranh, Vietnam.

The decommissioning and handing-over ceremony was presided over by Adm. Kumar and Rear Adm. Pham Manh Hung, Deputy Commander-in-Chief and Chief of Staff, VPN. "What makes this occasion even more significant is the fact that this is the first-ever occasion that India is offering a fully operational corvette to any friendly foreign country," Adm. Kumar noted.

"The transfer of INS Kirpan from the Indian Navy to the VPN symbolises the status of Indian Navy being the 'Preferred Security Partner' in the Indian Ocean Region and would definitely be a catalyst for enhancing the existing bilateral relations between the two navies," the Navy said in a statement. "The ship has been handed over today to VPN with complete weapon complement."

Manned by 12 officers and 100 sailors, Kirpan is 90 metres long and 10.45 metres in width with a maximum displacement of 1,450 tonnes. On June 19, Defence Minister Rajnath Singh had announced the gifting of INS Kirpan to VPN during the visit of his Vietnamese counterpart General Phan Van Gang to India.

THE WORLD'S BIGGEST OFFICE SPACE: ALL YOU NEED TO KNOW ABOUT THE SURAT DIAMOND BOURSE

Prime Minister Narendra Modi is expected to inaugurate the Surat Diamond Bourse, claimed to be the world's biggest office space in a single project, on November 21.

On Wednesday (July 19), Modi tweeted: "Surat Diamond Bourse showcases the dynamism and growth of Surat's diamond industry. It is also a testament to India's entrepreneurial spirit. It will serve as a hub for trade, innovation, and collaboration, further boosting our economy and creating employment opportunities."

What is the diamond bourse?

The Surat Diamond Bourse (SDB) has been planned to expand and shift the diamond trading business from Mumbai to Surat, the hub of cutting and polishing diamonds.

Surat's diamond trading market is located at present in Mahidharpra Hira bazaar and Varachha Hira Bazaar, where traders make transactions standing on the streets with almost no security measures. A major part of the diamond trading, however, happens in Mumbai at Bandra Kurla Complex (BKC), which has the amenities for international buyers.

Sources in the diamond industry say Mumbai has a space crunch and office real estate is pricey. Besides, a major chunk of the diamond traded in Mumbai is manufactured in Surat, from where local angadias carry them to Mumbai on trains, taking over 4.5 hours.



Biggest office space in the world

The SDB has been built on an area of 66 lakh square feet at DREAM (Diamond Research and Mercantile) city. According to a document by Delhi-based Morphogenesis, which designed the bourse, it is bigger than the biggest office space in the world, The Pentagon in the United States. Morphogenesis has also designed the BSE tower in GIFT City, Gandhinagar, and the Zydu Corporate Park in Ahmedabad.

Diamond businesses under one roof

The Surat Diamond Bourse will have over 4,200 offices ranging from 300 square feet to 7,5000 square feet each. The bourse has nine towers, each with ground plus 15 floors. All diamond-related activities and infrastructure, such as sale of rough diamonds and polished diamonds, diamond manufacturing machineries, software used in diamond planning, diamond certificate firms, lab-grown diamonds, etc. will be available in the bourse. Apart from this, 27 retail outlets of diamond jewellery will also be opened, for international and national buyers.

Over 4,000 CCTV cameras have been installed at different locations inside and outside the SDB, given the high-security product. A member of the SDB management committee said bio-metric details of employees will be taken, after which they can access the complex with a “wave of their hand”.

Will benefit local businessmen

Sources in the diamond industry said that many diamond merchants of Mumbai have already booked their offices in SDB. However, Surat poses a connectivity issue, unlike Mumbai which has a busy international airport. Surat city has one international flight running between Surat to Sharjah. Traders also cited the absence of seven-star hotels and the prohibition law as some of the reasons inhibiting businessmen from shifting entirely to Surat.

Sevantibhai Shah, who owns Venus Jewels of Surat, said, “The big companies, who already have offices in the Bharat Diamond bourse at BKC, will open offices in Surat too. They will run the business from both the places. But the small players of Surat, who cannot do business in Mumbai, will now get a chance to open their offices in Surat.”

The governing body

The SDB core committee has seven members with Vallabhbai Lakhani, owner of Kiran Gems, the biggest diamond firm of Surat, as its chairman. Others include Lalji Patel of Dharmanandan diamonds; and Mathurbhai Savani, owner of Savani Brothers diamond firm. Lalji Patel is the diamantaire who bought Prime Minister Narendra Modi’s monogrammed suit. A general committee member of the Surat Diamond Bourse, Dinesh Navadia, said, “All the 4,200 offices have been sold. The SDB will give direct employment to over 1 lakh people.”

Sources in the SDB said that the committee had purchased land from the state government at Rs 627 crore and appointed Morphogenesis to design the project. The construction contract was given to PSP Projects, an Ahmedabad-based firm. The construction started in December 2017 and was finished in just five years, despite the two pandemic years. The total project cost is Rs 3,200 crore.

The thematic landscaping is based on the ‘panch tatva’ theme, comprising the five elements of nature (air, water, fire, earth, and sky), said a Core Committee member.

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



EXPRESS VIEW ON 'AWARD WAPSI': WRITER'S CHOICE

A parliamentary panel, constituted in the wake of the 2015 “award wapsi” controversy, wants writers chosen for the Sahitya Akademi honour to sign an undertaking that they would not return their awards at any stage to protest any political incident. The Parliamentary Standing Committee on Transport, Tourism and Culture, which tabled its report in Parliament on Monday, reported that “such inappropriate incidents involving return of awards undermine the achievements of other awardees and also impact the overall prestige and reputation of the awards”. So, the panel wants “prior concurrence of shortlisted candidates for awards before finalisation”. The panel’s recommendations suggest wilful ignorance of, and disregard for, the role of Akademis, the place of writers in society, and the idea behind honouring them.

First, the Sahitya Akademi is an autonomous body. At the time of its inception in the early 1950s, the understanding was that the government would set it up, but once established “it (government) would refrain from exercising any control and leave them to perform their function as autonomous institution”. It honours writers in 24 Indian languages for original writings as well as translations annually. A panel of writers makes the selections. A Sahitya Akademi award is not a state honour like the Padma awards — it is the appreciation of an author by her peers, on behalf of the Akademi, which is registered as a society under the Societies Registration Act, 1860. Second, the writer is not a representative of the state. The panel’s apprehension that if an awardee returns an Akademi honour, it is “disgraceful to the country” is misplaced. Third, an award is an honour for individual excellence, it is not the state extending patronage — in fact, the state must see its association with a writer as a privilege. Finally, an award dangled as an incentive to conform is no honour.

Of course, “award wapsi” had a political context. The 39 writers who returned their awards did so as an act of protest against a growing “climate of intolerance”, wherein dissenting voices were targeted by right-wing groups. The immediate trigger in 2015 was the murder of Kannada scholar and Sahitya Akademi winner M M Kalburgi, who was shot, allegedly by right-wing activists, for his views. The protesting writers were highlighting the right to dissent and the state’s failure to protect this right. The government — and Parliament — should heed this message instead of finger-wagging at the protest’s political consequences.

FEWER TAKERS FOR BDS, MDS SEATS

For over five years now, both undergraduate (UG) and postgraduate (PG) dental courses across Indian institutes have seen anywhere between 10% and 55% seats going vacant, year on year. Private dental colleges in Maharashtra, Karnataka, and Punjab are the worst hit, say industry insiders.

Data from the Dental Council of India (DCI) accessed by The Hindu showed that between 2016-17 and 2022-23, there were 1,89,420 Bachelor of Dental Surgery (BDS) seats offered, of which 36,585 remained vacant. From 2017-18 to 2022-23, of the 38,487 Master of Dental Surgery (MDS) seats available, over 5,000 remained vacant. Though seats remain vacant, the Central government is aggressively adding dental colleges to boost the future healthcare of the country.

As per Ministry of Health and Family Welfare figures, the number of seats for dental education between 2014 and 2023 increased by 14% in the BDS degree and by 48% for the MDS degree. This has been attributed to the Dental Council of India taking steps to improve the quantity and



quality of dental education. In 2021-22, India had a total of 27,868 BDS seats and 6,814 MDS seats, as per Ministry data.

But health experts and industry insiders say that lack of professional growth opportunities and stagnant salaries are among the main reasons for students not opting for dental courses for several years now.

Ajay Sharma, a senior consultant dental surgeon at Max Hospital, New Delhi, said that a decade ago, dentistry was a booming profession in India. However, owing to the lack of cutting-edge technology and infrastructure in government colleges as well as the shortage of patients in hospitals attached to private dental colleges, students often graduate with a handicap, he said.

The current reality is that there are very limited government sector jobs. There is also low pay in the private sector — as low as ₹1 lakh to ₹2 lakh per annum. He said if the issue of providing proper jobs is taken care of, dentistry would flourish.

“What we are witnessing today is a saturation in metro cities and a lack of awareness of dental care in tier-2 cities,” Dr. Sharma added.

As per the Ministry of Education, of the top five dental colleges, the only government-run institution is Maulana Azad Medical College in Delhi. The rest are privately run and charge over ₹3 lakh per year. After a spend of a minimum of ₹15 lakh, “there are graduates who have worked for as little as ₹1,000 a month under seniors to learn a new technology or get experience with patients. This is happening at a time when MBBS or even Ayurveda graduates earn over ₹20,000 a month,” said Divyesh B. Mundra, a dentist turned public health professional.

However, the Ministry has said that it has taken measures to improve the quality of dental education.

CINEMATOGRAPH (AMENDMENT) BILL, 2023 PASSED IN RAJYA SABHA: WHAT NEW PROVISIONS SAY ON PIRACY, CERTIFYING MOVIES

Rajya Sabha on Thursday (July 27) passed the Cinematograph (Amendment) Bill, 2023, which cracks down on film piracy along with changing how movies are certified by the censor board.

The Bill lays down a three-year jail term and a fine of up to 5% of a movie’s production cost for those making its pirated copies. It introduces three certifications under the ‘UA’ category, UA 7+, UA 13+ and UA 16+, which means that children younger than the given age limits can access such movies with parental guidance.

It also empowers the Central Board of Film Certification (CBFC) to give separate certificates for a film’s exhibition on television or other media.

The background

According to officials, the Cinematograph Act, 1952 needed to be amended due to several reasons — to harmonise the law with various executive orders, Supreme Court judgements, and other legislations; to improve the procedure for licensing films for public exhibition by the CBFC; and to expand the scope of categorisations for certification.



Lastly and importantly, there was a huge demand from the film industry to address the issue of unauthorised recording and exhibition of films and curb the menace of piracy, which is causing them huge losses.

The two versions

The Cinematograph (Amendment) Bill, 2019 was introduced in the Rajya Sabha on February 12, 2019, proposing changes related only to film piracy. This Bill was referred to the Standing Committee on Information Technology, which presented its report in March 2020.

The recommendations by the panel included age-based categories of certification and the removal of redundant provisions. So, the revised Cinematograph (Amendment) Bill, 2021 was released on June 18, 2021, seeking public comments.

In 2022, consultations with industry stakeholders were held, based on which the Ministry introduced the 2023 Bill.

Interestingly, with the Jammu & Kashmir Reorganisation Act, 2019, all special provisions in central laws related to the erstwhile state have become redundant. Thus, the special reference to J&K in the Act has been omitted in the 2023 Bill.

Showing films on TV

As the Cable Television Networks (Regulation) Act, 1995 stipulates that only UA category films can be shown on TV, the Bill allows for a change of category of a film from A (adult) or S (specialised groups) to UA, after making suitable alterations. While the earlier Act provided that the certificate issued by the CBFC is valid for 10 years, it would now be valid perpetually.

The new Bill clarifies that the Centre will not have any revisional powers over CBFC certificates.

On piracy

Recording or helping a person record any film that is being exhibited at a cinema theatre using audio-visual devices has been prohibited under the Bill. “The film industry is facing a loss of Rs 20,000 crore annually because of piracy,” Union Information and Broadcasting Minister Anurag Thakur said in the Rajya Sabha.

While inserting new clauses for piracy, the Bill aims to harmonise the Cinematograph Act with the existing laws that tangentially address piracy — the Copyright Act, 1957 and the Information Technology Act (IT) 2000, officials said.

EXPRESS VIEW ON OPPENHEIMER AND ANURAG THAKUR: OVERSTEP, OVERREACH

Anurag Thakur, as a movie-goer, has every right to dislike Christopher Nolan’s Oppenheimer. As a minister, he also has the privilege of expressing his views and being heard on many more public platforms. Having done so, however, the Union Minister for Information and Broadcasting must step back, refrain from crossing the line. He must not undermine the institutional independence and autonomy of the statutory body that is tasked with film certification in the country. By demanding an explanation from the Central Board of Film Certification (CBFC) on why it cleared a scene involving lines from the Bhagavad Gita in Oppenheimer, Minister Thakur has done just that. In the process, he has dealt a blow to both artistic freedom and due process.



The members of the CBFC are appointed by the government but the Board is mandated to function independently. Changes, as and where necessary, are suggested to the makers before the film is certified and released. The minister does not have a say in this process, and the certification once given, cannot be revoked. Oppenheimer went through the required paces and was cleared for release. By asking the Board for an “explanation”, the minister is attempting to override the institutional mechanism with a political response. In a climate in which mobs, virtual and real, driven by “hurt sentiments”, often claim legitimacy for their attempts to impose curbs on the right to speech and expression, and succeed, Thakur’s intervention is worrying.

Film-makers — all artists, in fact — have a right to be seen and heard. In fact, as recently as November 2022, the ruling establishment showed more maturity when Israeli filmmaker Nadav Lapid, who served as chairperson of IFFI’s international jury, had criticised the screening of The Kashmir Files in the festival, calling it a “vulgar and propaganda” movie. The government, despite many ministers proclaiming in public how much they liked the movie, and agreed with its political content, did not react. There were no ministerial calls to arms against Lapid. That restraint is needed now too. Minister Thakur has sent out the wrong signals. The CBFC must dig its heels in, stand by its earlier decision. If it caves in and makes further changes to Oppenheimer as a result of political pressure, it will only undermine itself.

UNESCO ENDORSES BANNING SMARTPHONES IN SCHOOLS

The United Nations Educational, Scientific and Cultural Organization (UNESCO) has warned against an uncritical rush toward embrace of digital products in educational settings, noting that “there is little robust evidence on digital technology’s added value in education” and that “a lot of the evidence comes from those trying to sell it”. It cited the example of how “Pearson funded its own studies, contesting independent analysis that showed its products had no impact”. At the same time, there was ample evidence of a negative link between excessive screen time and a child’s educational performance and emotional stability, it said.

The UN body’s Global Education Monitoring Report, 2023, titled “Technology in education: a tool on whose terms?”, has endorsed banning smartphones in schools in situations where “technology integration does not improve learning or if it worsens student well-being”. It highlighted that “mere proximity to a mobile device was found to distract students and to have a negative impact on learning in 14 countries, yet less than one in four have banned smartphone use in schools”. It also cited research studies to point out that “banning mobile phones from schools improves academic performance, especially for low-performing students”.

Detailing the rationale for restricting smartphone usage for children, the report cited a study of young people between the ages of two and 17 which “showed that higher screen time was associated with poorer well-being; less curiosity, self-control and emotional stability; higher anxiety; and depression diagnoses”.

The report also flagged the higher costs of delivering basic education where there is a dependence on the setting up of digital infrastructure, and how this could worsen the problem of unequal access in low-income countries. “Technology is often bought to plug a gap, with no view to the long-term costs for national budgets. The cost of moving to basic digital learning in low-income countries and connecting all schools to the Internet in lower-middle-income countries would add 50% to their current financing gap for achieving national SDG 4 targets,” the report stated.



Another major concern around the indiscriminate use of digital technology in education was children's privacy. "Children's data are being exposed, yet only 16% of countries explicitly guarantee data privacy in education by law. One analysis found that 89% of 163 education technology products recommended during the pandemic could survey children. Further, 39 of 42 governments providing online education during the pandemic fostered uses that risked or infringed on children's rights," the report said.

Urging governments to "putting learners first" when it came to decisions on the use of digital technology, the report urged policymakers to ensure child data protection laws and accountability mechanisms tailored to children.

DNA TECHNOLOGY BILL: FEATURES, DEBATE, AND WHY IT WAS WITHDRAWN

On Monday, the government withdrew The DNA Technology (Use and Application) Regulation Bill 2019 from the Lok Sabha, ending a 20-year effort to build a new regulatory framework for the use of DNA fingerprinting technology in the criminal justice system. The Bill, introduced in Parliament multiple times, faced opposition on grounds of the accuracy of DNA technology, potential threats to individual privacy, and the possibility of abuse.

The present Bill was introduced in the Lok Sabha in July 2019 and was referred to the Department-related Parliamentary Standing Committee on Science and Technology. The committee submitted its report in February 2021, recommending several changes in the draft. But instead of introducing a fresh Bill with changes, the government decided to withdraw it altogether, its decision made easy by the fact that the main provisions of the Bill have already been enacted as part of another law, the Criminal Procedure (Identification) Act, that was passed by both houses of Parliament last year.

LOK SABHA PASSES CONTENTIOUS BIOLOGICAL DIVERSITY BILL AMID DIN

The Lok Sabha on Tuesday passed the Biological Diversity (Amendment) Bill, 2021 amid sloganeering by Opposition members demanding that Prime Minister Narendra Modi make a statement on the Manipur violence. The Bill aims to amend the Biological Diversity Act, 2002.

"To ensure that tribes and vulnerable communities benefit from the proceeds of medicinal forest products, these amendments were necessary. By decriminalising certain activities, we are encouraging Ayurveda as well as ease of doing business."

The amended Bill was drafted in response to complaints by traditional Indian medicine practitioners, the seed sector, industry and researchers that the Act imposed a heavy "compliance burden".

The Bill sought to exempt registered AYUSH medical practitioners and people accessing codified traditional knowledge, among others, from giving prior intimation to State biodiversity Boards to access biological resources for certain purposes.

Environmental organisations such as Legal Initiative for Forests and Environment (LIFE) have said that the amendments were made to "solely benefit" AYUSH (Ayurveda, Yoga and Naturopathy, Unani, Siddha and Homeopathy) firms and would pave the way for "bio piracy".

The Bill decriminalises a range of offences under the Act and substitutes them with monetary penalties.



An analysis by the Centre for Science and Environment and the Down To Earth magazine on how the Biodiversity Act was being practically implemented, showed serious shortcomings. There was no data — barring in a few States — on the money received from companies and traders for access and benefit-sharing from use of traditional knowledge and resources.

A Joint Parliamentary Committee was constituted in December 2021 to analyse the amendment Bill.

Congress spokesperson Jairam Ramesh, who was a member of the committee, in a letter addressed to other members and BJP MP Sanjay Jaiswal, committee chairperson, said that these exemptions could open the law for abuse.

EXPRESS VIEW ON FOREST CONSERVATION ACT AMENDMENTS: MISSING THE WOODS

The Bill to amend India's Forest Conservation Act (FCA) rightly draws attention to the country's global warming mitigation targets. Its "Statement of Objectives" underlines the "necessity to broaden the horizon of the Act to... increase the forest cover for creation of carbon sink of additional 2.5 to 3 billion tonnes of carbon equivalent by 2030". But this tone of ecological appreciation does not resonate in large parts of the legislation that was passed by a voice vote in the Lok Sabha on Wednesday. Diversion of forests for the "construction of roads, railway lines or projects of strategic nature near the country's international borders" would not require clearance once the Bill becomes law. The country's security is non-negotiable. But concerns over the deregulation proposed in the Bill to fast-track military projects require wide-ranging deliberations, especially because most frontier zones of the country are also amongst its most ecologically fragile.

The FCA, passed in 1980, extended protection to all lands classified as forests in government records. In 1996, a landmark ruling of the Supreme Court in the Godavarman case extended the Act's ambit to all lands that satisfied "the dictionary definition of a forest". The Court's ruling prevented the deforestation of tracts that government surveys had not marked as forestland. But it also came in the way of removing lands that were no longer forests from the Act's purview. Despite their stated intent of making the FCA consistent with the "social and economic" realities of the country, the new amendments do not attempt to correct this anomaly. Instead, they go back to the FCA's original remit. Conservationists fear that this could invalidate the protection accorded by the SC to large tracts of land that have the characteristics of forests but are not notified as such in government records. The Forest Survey of India's data indicate that about 28 per cent of the country's forests could lose protection if the Bill becomes law. The legislation proposes to compensate for such losses with clauses that enable plantations. This is a positive intervention from an agro-forestry perspective. Plantations can also sequester carbon to an extent. But they are no substitute for the large gamut of ecological services offered by natural forests.

The Bill was placed before the Lok Sabha in March. It was referred to a Joint Committee of Parliament, which endorsed the legislation without any changes. Six Opposition members in the panel, however, dissented. They pitched for environmental audits and suggested that state governments be consulted before forest diversion orders are issued in the geologically-sensitive Himalayan and northeastern regions. Four hundred scientists and academicians and more than 100 former civil servants also expressed concerns about the process being followed in passing the Bill. They reasoned that the overwhelming majority of the BJP in the Joint Committee made the agency's examination partisan, and requested the scrutiny of the Parliamentary Standing Committee on Science and Technology, Environment, Forests and Climate Change. Such concerns



have been ignored. And now, the Lok Sabha has passed the Bill without a meaningful debate. The Rajya Sabha should do better, take all concerns on board.

HIMACHAL FLOODS: A MAN-MADE DISASTER?

The story so far:

Flash floods during this year's monsoon season have caused unprecedented damage to both lives and assets in Himachal Pradesh. The death toll has crossed 150, and the estimated total loss amounts to ₹10,000 crore. Although climate change is expected to have played a hand in causing the high precipitation leading to these flash floods, human induced disasters resulting from planned development have played a significant role in causing such colossal losses. In the last five years (before 2022), 1,550 people lost their lives and nearly 12,444 houses were damaged.

Is climate change the only reason for the rain and floods?

The IPCC (Intergovernmental Panel on Climate Change) VI report has clearly stated that the Himalayas and coastal regions of India will be the hardest hit by climate change. In the Himalayas, there is a noticeable pattern of increased precipitation occurring in shorter periods of time. The India Meteorological Department data shows that the normal rainfall during this period is expected to be between 720mm and 750 mm. However, in certain instances, it has exceeded 888 mm in 2010 and 926.9 mm in 2018. This year, the precipitation so far has been attributed to the combined effect of the south-west monsoon with western disturbances. The total rainfall from June to date was 511 mm.

Should the development model be reworked?

Apart from climate change, anthropogenic factors have also significantly contributed to the disaster. The State's development model initiated after it came into being in 1971 had been successful in transforming Himachal Pradesh into an exemplar of development for mountain States. This model, known as the Dr. Parmar model (named after the founding Chief Minister, Dr. Y.S. Parmar), focused on exemplary land reforms, robust state-led investment in social welfare, and a strong emphasis on human resources. These efforts resulted in Himachal Pradesh ranking second in social development indices. By the 1980s, electricity had reached every household, there was improved connectivity in remote areas through health care centres, many schools came up, there were major advancements in agriculture, and a shift towards the apple and off-season vegetable economies fostered both economic and social vibrancy.

However, the advent of liberalisation led to significant changes, with the Central government demanding stringent fiscal reforms and mountain States being forced to generate their own resources for fiscal management. What were these resources? The exploitation of natural resources, including forests, water, tourism, and cement production, became a major focus for development. This led to the rapid construction of hydropower projects, often causing damage to rivers and their ecosystems, widening of roads without proper geological and engineering assessments, expansion of cement plants altering land use patterns, and a shift in agricultural practices to cash crop economies that affected the landscape and river systems.

Is building hydropower projects wrong?

The pursuit of hydropower projects became a dominant focus for hill States, with their capacity measured in terms of megawatts (MW) to attract investments. Notably, there was a significant



shift in funding priorities of multilateral agencies. Prior to 2000, these agencies were opposed to financing large hydropower projects, but they changed their stance and started providing funding for such ventures, making finance readily available for these projects.

One of the main reasons for the devastating impact of floods in the region is the uncontrolled construction of these hydropower projects, which have essentially transformed mountain rivers into mere streams. The technology employed, known as “run of the river” dams, diverts water through tunnels burrowed into the mountains, and the excavated material (muck) is often disposed of along the riverbeds. During periods of higher precipitation or cloudbursts, the water returns to the river, carrying the dumped muck along with it. This destructive process is evident in rivers like Parvati, Beas and Sutlej, as well as many other small hydropower dams. Moreover, long tunnels spanning 150 km have been planned or commissioned on the Sutlej river causing significant harm to the entire ecosystem.

Currently, there are 168 hydropower projects in operation, generating 10,848 MW of electricity. Looking ahead, it is projected that by 2030, 1,088 hydropower projects will be commissioned to harness 22,640 MW of energy. This surge in hydropower projects raises concerns about the inevitability of impending disasters in the region.

What about tourism?

The development-driven road expansion is aimed at promoting tourism and attracting a large number of visitors. The road-widening projects, often carried out by the National Highway Authority of India (NHAI), involve transforming two-lane roads into four-lane roads and single lanes into two-lane roads. The development model follows a public-private-partnership (PPP) approach, emphasising the need to complete these projects rapidly. However, this has resulted in bypassing essential geological studies and mountain engineering skills.

Traditionally, mountainous regions are not cut with vertical slits but are terraced, minimising the damage to the environment. Unfortunately, in both the four-lane projects in Manali and Shimla, the mountains have been cut vertically, leading to massive landslides and damage to existing roads. Restoring these roads after such disasters is a time-consuming process, often taking months or even years. The consequences of such road expansions are evident during even normal rainfall, as it leads to slips and slides, amplifying the magnitude of the destruction during heavy rain or floods.

How have cement plants harmed the environment?

The establishment of massive cement plants and extensive cutting of mountains in districts like Bilaspur, Solan, Chamba have resulted in significant land use changes that contribute to flash floods during rainfall. The cement plants alter the natural landscape, and the removal of vegetation leads to reduced capacity of land to absorb water.

How have crop patterns changed?

A silent transformation is occurring in agriculture and horticulture patterns, leading to significant shift in both landholdings and produce. More farmers are now embracing a cash crop economy over traditional cereal farming. However, this shift has implications for the transportation of these crops to markets within a short timeframe owing to their perishable nature.

In response to this need, roads are being constructed hastily without considering essential land cutting and gradient requirements. Modern excavators are employed in construction, but without



creating proper drains or designated areas for dumping muck. Consequently, when it rains, the water finds its own path, carrying the dumped muck along with it and depositing it into the river ecosystem. As a result, even during normal rainfall, rivulets and rivers experience rapid swelling. It is worth noting that although the total designated road length in the State is around 1,753 km, the total length of all roads including the link and village roads is more than 40,000 km.

What is the way out?

A Commission of Inquiry must be instituted to bring the major stakeholders — the people — on board and discuss both the policy framework failures, as well as the peculiar aspects of the projects undertaken.

A new architecture is required to empower local communities over their assets. The losses faced in the forms of culverts, village drains, small bridges, schools, other social infrastructure must be compensated; and this can be done if the assets are insured and the custodians are local communities. This will help to rebuild the assets quicker. With climate change a reality, humans should not add to the problem, but make adequate changes in infrastructure planning to avert disasters that the State has been witnessing since June.

THE ANATOMY OF THE YAMUNA FLOODPLAINS

The story so far:

Battered by heavy rains, the Yamuna looks slow, sluggish and swollen. Last week, the water levels hit a 60-year-high, gushing through elite neighbourhoods built close to the floodplains. Waters advanced towards the Taj Mahal for the first time in half a century. More than 25,500 people were evacuated and ferried to rescue camps in a brown stream of waste; many of them lived in make-shift low-lying slum dwellings next to the river.

Why is the Yamuna important?

The late environmentalist Anupam Mishra once called Yamuna, Delhi's "real town planner": it meandered through Delhi ensuring the city was never short of water and never ravaged by famine or flood. Delhi was "well-planned along the course of the river Yamuna, but it isn't so anymore," he said. Causes, experts argue, can be traced to haphazard construction activities, rapid urbanisation, lack of proper housing and lax regulations — all of which have besieged the floodplains.

"We talk about rivers in isolation, but floodplains are inseparable from the river channel," says Venkatesh Dutta, a professor at the School of Earth and Environmental Sciences, Babasaheb Bhimrao Ambedkar University. The river system includes both water and land. Yamuna is a lifeline to five States, and its floodplains are a charging point.

Yamuna courses east of Delhi, entering the city from Palla village and exiting at the Okhla barrage. The floodplains are two km wide on each side. The floodplain along Yamuna's 22 km run in Delhi, designated as the O zone by the Delhi Development Authority, has an area of approximately 9,700 hectares — the size of 1,500 new Parliament buildings.

Between Palla and Okhla, the composition of the floodplains changes from farmlands to slums, colonies, flyovers and bridges. It is also dotted with permanent structures like Ring Road,



Akshardham Temple complex, Commonwealth Games Village, Player's Building (housing the Delhi Secretariat) and the Indira Gandhi Indoor Stadium.

What is submerged now was once part of the river's natural flow, Dr. Dutta explains. A river has the "right to expand" and needs to breathe through its flood plains. Any attempt to concretise constricts its air supply. "This is happening not only in Delhi, but all major cities including Pune, Lucknow, Mumbai," he said.

As part of river systems, floodplains slow water runoff during floods, recharge groundwater and store excess water, replenishing the city's water supply. "When you have sluggish flow, the surplus water stored in the floodplain is released back during the non-monsoon season," Dr. Dutta explains. "If you lose the floodplain, you also lose the storage of water." Delhi recorded similarly devastating floods in 1978, 1988 and 1995 which inundated floodplains, adversely impacting their health.

Who lives on these floodplains?

A 2022 report found there are 56 bastis (one basti has 15 or more houses), with 9,350 households and 46,750 people. Almost half of the households (4,835) practise farming as a livelihood; others rely on daily wage work, fishing, nurseries, and animal herding.

Most residents migrated from Uttar Pradesh, Bihar, Haryana, Jharkhand, West Bengal and Rajasthan; some bastis have existed for eight decades and others were built more recently. Farmers near Palla and Hiranki villages traditionally grow rice, wheat, and flowers on the rich silt deposited by the river.

"Zone O supports a large variety of nature-based livelihoods with a low ecological footprint. Yet, these are being forcibly evicted in the name of ecological rejuvenation of the region," the report noted. The farmland size has reduced from 4,850 hectares in 2000 to 3,330 hectares in 2020, as people were evicted, and livelihood shifted to daily wage work.

The National Green Tribunal (NGT) in 2016 imposed a blanket ban on agriculture-related activities till the "Yamuna is restored and made pollution free".

On the NGT's orders, the DDA in 2021 evicted 800 families in the Muslim-dominated Batla House area, a part of the floodplains that falls under no-construction zones. Private contractors built flats and sold to people, mostly daily wage and domestic workers, who cannot afford housing in other areas.

How did settlements emerge?

The first major non-agriculture settlements appeared after Independence when refugees from Western Punjab fled to Delhi. They built kuccha houses on the floodplains along the Yamuna Pushta (from the ITO bridge and up to Salimgarh Fort). The planning era propelled urbanisation in the 1950s and '60s, witnessing the construction of the first thermal power plant (employing people as labourers to unload coal from trains and clear fly ash), the Ring Road and Rajghat Samadhi.

Over 180,000 jhuggis on the Yamuna Pushta were demolished during the 1975 Emergency, and people were resettled in the peripheries.



MERCURY RISING

The United Nations Secretary-General, António Guterres, this week reiterated the consequences of the climate catastrophe that has enveloped the globe. The earth had passed from a warming phase into an “era of global boiling”, he said at the UN’s headquarters in New York. His comments come even as scientific evidence converges on the conclusion that July is set to be the hottest month in the last 12,000 years. This was a “disaster” for the whole planet, he said, noting that “short of a mini-Ice Age over the next few days, July 2023 will shatter records everywhere”. Scientists from the World Meteorological Organization (WMO) and the European Commission’s Copernicus Climate Change Service described conditions this month as “rather remarkable and unprecedented”, with July seeing the hottest three-week period on record. Average July temperature so far has been 16.95° Celsius, 0.2° C warmer than in July 2019 — a record in the 174-year observational data of the European Union.

With ocean temperatures on the rise and the Central Equatorial Pacific Ocean transitioning from La Niña conditions — where average sea surface temperatures are below normal — to El Niño conditions, the opposite, it was widely expected that temperatures would be warmer than that in the last three years (when La Niña prevailed). However, it is the distribution and impact of the 16.95° C, which includes temperature in northwest China touching 52° C; wildfires in Greece and the baking heat in the United States’ Southwest. The extraordinarily high rains in north and western India, while largely due to prevailing monsoon conditions, were also due to the warm air increasing atmospheric capacity to hold moisture resulting in short torrential bursts, causing floods and devastation. While climate prognostication induces pessimism, Mr. Guterres said that it was still possible to limit global temperature rise to 1.5° C and avoid the very worst of climate change but only with “dramatic, immediate climate action”. At a G-20 ministerial meet in Chennai the same day, the COP28 President-designate, Sultan Ahmed Al Jaber, also emphasised that the world’s largest economies should be more ambitious with emission cuts. While Prime Minister Narendra Modi has promised to make India the “third largest economy” if his party is re-elected in the general election, it will also mean greater pressure on India to take on a greater share of greenhouse gas mitigation responsibilities. This could mean advancing its net zero commitments from 2070 to 2050, as Mr. Guterres says, and generating fossil-free electricity by 2040. While these are the testy points on which climate negotiations hinge, the climate — it bears reminding — waits for nobody.

WELCOME HAPPENING

With the Bioethics Unit of the ICMR placing a consensus policy statement on Controlled Human Infection Studies (CHIS) for comments, India has taken the first step in clearing the deck for such studies to be undertaken here. CHIS, also called human challenge studies, where healthy volunteers are intentionally exposed to a disease-causing microbe in a highly controlled and monitored environment, has been carried out for hundreds of years, an example being the yellow fever study in the early 1900s to establish that mosquitoes transmit the virus. Typically, a less virulent strain of the microbe is used to study less deadly diseases that have proven drugs for treatment. They are more often undertaken on a small number of volunteers to understand the various facets of infection and disease, and, occasionally, to accelerate the development process of a medical intervention. When used as part of vaccine development, these studies are initiated only when safety and immune responses of the candidate vaccines are known through early phases of clinical testing. Importantly, human challenge studies are not done as an alternative to phase-3 efficacy trials, but to help select the best candidate for testing in a conventional phase-3

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



clinical trial. Phase-3 clinical trials that follow human challenge studies often require fewer volunteers, speeding up the development process. In the last 50 years, CHIS studies have been carried out with thousands to accelerate vaccine development against typhoid and cholera. During the COVID-19 pandemic, the Imperial College London used 36 volunteers to study facets of the SARS-CoV-2 infection. In 2020, WHO approved using CHIS for accelerating COVID-19 vaccine development.

There are several ethical challenges with human challenge studies, which require well-trained and robust systems in place. While collaborations with institutions and scientists well versed in conducting such studies are a must, navigating the ethical minefield is a challenge. Several clinical trials, including those by or involving the ICMR, have been mired in ethical violations, such as the HPV vaccine trial in Andhra Pradesh, in 2010. The ethical challenges while conducting CHIS are of a higher magnitude, the scope for misuse vast, and the repercussions severe. There is potential for exploitation, given the monetary dimension involving volunteers. If it becomes a reality, India should use CHIS only to study diseases with safe and effective treatment. Using CHIS to study novel microbes/disease with limited medical intervention should wait till Indian scientists gain expertise, and robust institutional structures and mechanisms are in place.

WILL GENERIC SUPPLY OF BEDAQUILINE BE ACCESSIBLE?

The story so far:

Bedaquiline has now become the cornerstone to cure drug-resistant tuberculosis (DR-TB). Last week, a major barrier for drug resistant TB care ended, when Johnson & Johnson's patent on bedaquiline expired on July 18. This long-awaited expiry will allow generic manufacturers to supply the drug, but J&J appears intent on maintaining its monopoly over the bedaquiline market.

What has J&J done?

J&J has filed secondary patents over bedaquiline till 2027, which were granted in 66 low-and middle-income countries. It includes 34 countries with high burden of TB, multidrug-resistant TB (MDR-TB), and TB/HIV. Over the past week, J&J has faced public outrage for seeking to extend its patent on bedaquiline. A first of its kind deal between J&J and the Global Drug Facility (GDF), a non-profit distribution agency housed in the WHO, could expand access to the drug. Researchers estimate that, with the introduction of competition from India, the price of bedaquiline will reduce in the range of \$48-\$102 for a six-month treatment course — which is three to six times lower than the current globally negotiated price paid by countries (\$272) when it is procured through the GDF.

What is the threat from tuberculosis?

Tuberculosis was the world's deadliest infectious disease, as declared by the WHO, before COVID-19 swept the world. Each year, nearly half a million people develop drug-resistant TB and nearly 10.4 million people develop drug-sensitive TB. One-third of the world's population has latent TB, a version of the disease that can turn active as immunity falls. Nearly 2.8 million patients, the most in the world, live in India making it a national public health emergency. Globally, DR-TB is a major contributor to antimicrobial resistance and continues to be a public health threat.



Who made bedaquiline?

Janssen Pharmaceutical (a subsidiary of J&J) made bedaquiline around 2002. Several of the phase I and II clinical trials — where the safety and efficacy of the drug is established before the drug's registration—were sponsored by public and philanthropic organisations such as the U.S. National Institutes of Health (NIH), National Institute of Allergy and Infectious Diseases, and the TB Alliance. Following the 2012 approval of bedaquiline based on phase II data, several research institutes, treatment providers, including national TB programmes and medical humanitarian organisations, have put in resources in additional trials, operational research, and pharmacovigilance to further document the safety, efficacy and optimal use of bedaquiline in DR-TB regimens. The recent WHO recommendation of bedaquiline being a core drug for the treatment of DR-TB is largely based on the evidence produced through these collective efforts. However, J&J has claimed sole ownership of it, protected by its aggressive patenting strategies.

Will the drug be available in India?

Other DR-TB drugs like linezolid have decreased in prices by over 90% with generic competition once Pfizer's patent expired in 2015. Therefore, national TB programmes are waiting for the generic supply of bedaquiline from Indian manufacturers to reduce prices.

In India, a 'pre-grant opposition' was filed by a patient group and two TB survivors — Nandita Venkatesan from India, and Phumeza Tisile from South Africa — both of whom had to endure the more toxic DR-TB treatments that lasted up to two years and caused excruciating side effects: they both lost their hearing. As a result of their legal challenge, in a landmark decision before World TB Day, the Indian Patent Office rejected the U.S. corporation J&J's secondary patent which would have extended its monopoly for four more years. Indian manufacturers will now be able to supply affordable, quality assured generic versions of bedaquiline in India as the primary patent expired on July 18.

A DIFFERENT KETTLE OF FISH: KASHMIR WANTS EUROPE TO TASTE ITS TROUT

The Valley's cold, gushing streams are ideal for the fish, the most popular on its platter; it was European experts who motivated J&K to take up trout farming; entrepreneurs in the Union Territory are eyeing a slice of market in the distant continent with over a 1,000 farmers engaged in production

When a Scotsman named J.S. Macdonall shipped 1,800 trout eggs into Kashmir in 1900, he introduced the fishing culture to the region, turning Srinagar's clean and fast-moving streams into a sporting hub for local and foreign anglers. Over a century later, cold-water trout is the most popular fish on the Valley's platter, and a growing number of farmers are eyeing opportunities to export trout to meet European demand, bringing the saga full circle.

The past decade has witnessed a sea change in trout farming since the Jammu and Kashmir (J&K) government decided to allow the entry of private players. In 2019-20, J&K had 534 farmers producing 650 tonnes of trout; by 2022-23, the industry had grown to 1,144 farmers and production had shot up more than 200% to a whopping 1,990 tonnes, says the Union Territory's Fisheries Department.

"It was the European experts who motivated J&K towards trout farming. In 1984, they supported a project in Kokernag in south Kashmir and suggested to rope in water-run mill owners to take up trout farming. The idea was to limit the government role to providing seed, feed, and monitoring,"

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former Fisheries Department Director R.N. Pandita told The Hindu. “Kashmir’s water and climatic conditions are akin to Europe. Small farmers took up farming in the first phase and now we see more educated unemployed youth coming forward,” he added.

Mr. Pandita believes that India, with the help of Kashmiri farmers, could surpass Denmark, which produces more than 55,000 tonnes of trout a year.

CAPTIVE-BRED VULTURES TAKE WING IN FOREST EXPANSES

In 2020, eight critically endangered oriental white-backed captive-bred vultures were released into the wild for the first time in India from the Jatayu Conservation Breeding Centre in Pinjore, Haryana.

Close to three years later, five survive and two have paired and successfully nested, in the untamed habitat of the Shivalik range in the foothills of the Himalayas. This has received a hurrah from wildlife enthusiasts working towards protecting the vultures that have been under threat of extinction since the 1990s.

There has been no report of deaths due to veterinary non-steroidal anti-inflammatory drugs (NSAIDs). This too is a relief for ornithologists, who had over the years been worried about the uncontrolled use of these drugs on cattle, especially the illegal use of the banned diclofenac. Vultures feeding on their carcasses die as the drugs are toxic to them.

“Nesting is a very important milestone and an encouraging sign for the re-induction programme. Also, the fact that there has been no mortality is inspiring and indicates increasing vulture-safe zones,” Kishor Rithe, the interim director at the Bombay Natural History Society (BNHS), said.

After the release from Pinjore, 31 oriental white-backed vultures were released in batches in West Bengal in 2021. “All the birds fly every day and have started locating their own food. Our teams have been monitoring the released birds. Of the 31, as many as 29 are surviving,” Mr. Rithe said.

In 1993, there was an estimated 40 million vultures in India, a BNHS study said. The population of three species — the oriental white-backed, the long-billed, and the slender-billed — has declined by over 97% since the 1990s.

The oriental white-backed vulture’s prevalence has gone down by an astonishing 99.9%. All three species are classified as critically endangered by the International Union for the Conservation of Nature (IUCN), composed of both government and civil society bodies. The species come under Schedule 1 of the Wildlife Protection Act, 1972, meaning they enjoy the highest level of protection.

The BNHS and Royal Society for Protection of Birds (RSPB) have been managing four Jatayu conservation breeding centres across the country in partnership with the State governments of Haryana, Madhya Pradesh, West Bengal, and Assam. Through this conservation breeding programme, the BNHS-RSPB has bred more than 700 birds in captivity since 2004.

The birds “wear” tracking devices, through which the team has found that one of the oriental white-backs released from Rajabhatkhawa in West Bengal flew into Nepal, re-entered India, and then reached Bhutan, and is now back in India. “So, this bird is moving between Nepal, Bhutan, and India,” Mr. Rithe said.



Soft release centres

Prompted by the success, the BNHS has already started the construction of soft release centres in Madhya Pradesh, Assam, Rajasthan, and at three tiger reserves in Maharashtra. Mr. Rithe said tiger reserves had become free from humans and livestock, and had sufficient wild prey that were free from NSAIDs. Hence the BNHS now intends to use these areas to release the captive-bred vultures. A vulture-safe zone is an area of 30,000 sq. km that is declared free from the drug diclofenac, says the IUCN.

Conservationists believe that a ban on NSAIDs which are toxic to vultures will go a long way in vulture conservation.

Vibhu Prakash, an independent raptor researcher and formerly associated with Pinjore's conservation centre, said that the Drugs Technical Advisory Board (DTAB), a government body, had recently recommended a ban on the use, sale, and manufacture of veterinary drugs aceclofenac and ketoprofen, for animal use.

The DTAB, in its meeting on May 10, agreed to prohibit the manufacture, sale and distribution of the drugs ketoprofen and aceclofenac, and their formulations for animal use.

"Once a notification regarding the ban is out, it would really help in vulture protection, as vultures feeding on cattle carcasses treated with these drugs suffer mortality due to visceral gout and kidney failure. The complete ban would help to stop this," he said.

The DTAB also suggested that a list of all drugs which affect animal health or the environment be prepared for further action, and recommended constituting a subcommittee to examine the matter in detail and submit its report to the Board.

STORY OF THE MUHARRAM PROCESSION IN SRINAGAR, BACK AFTER THREE DECADES

On Thursday, thousands of Shia mourners walked through the heart of Srinagar after the Jammu and Kashmir government allowed a Muharram procession for the first time in more than three decades.

The decision to allow the procession on the 8th of Muharram (which is the first month of the Islamic year that began on July 19 this year) has been hailed; it has also spurred demands for lifting the ban on the main Ashura procession on the 10th Muharram (which will be observed on July 29) as well.

Shia Muslims around the world take out Ashura processions to commemorate the martyrdom of Imam Hussain, a grandson of the Prophet, who was killed in the Battle of Karbala (680 AD; 10 Muharram 61 AH) in present day Iraq.

Restrictions on Muharram processions under Dogras

While the Dogra rulers of Jammu and Kashmir either prohibited Muharram processions or allowed them only at night, the recent ban started with the beginning of militancy in the erstwhile state.

In the 1920s, the Dogras ordered that Muharram processions should be wrapped up before sunrise, citing "Shia-Sunni tensions". In 1924, mourners defied the order and marched during the day and, according to author Hakim Sameer Hamdani, were joined by Sunnis as well. The



procession went to the Imambara in the Zadibal neighbourhood of old Srinagar, and culminated at the Sunni shrine in Narwara.

HOUSE PANEL EXPRESSES CONCERN OVER SLOW DOCUMENTATION OF ANTIQUITIES

A Parliamentary Standing Committee has expressed dismay at the slow pace of documentation of antiquities noting that this was critical in proving ownership and reclaiming stolen heritage items. The government has been intent on securing the repatriation of stolen Indian artefacts from abroad.

The Parliamentary Standing Committee on Transport, Tourism and Culture noted in its report submitted in the Rajya Sabha on Monday that the National Mission on Monuments and Antiquities (NMMA), which is mandated with documenting the country's monuments and antiquities, has only been able to document 16.8 lakh antiquities out of a total of 58 lakh which is just about 30%. It says that the Committee was informed by Director General of Archaeological Survey of India (ASI) that the figure of 58 lakh antiquities is only an estimate and there may well be many more.

"If so, it makes the slow pace of documentation under NMMA all the more alarming", it says.

The NMMA was launched in 2007 to document the country's monuments and antiquities. This will help in the creation of a database of all antiquities and can be referred to readily in case of fraudulent dealings or theft. It was initially set up for a period of five years from 2007. It was extended for a further five years till 2017 and later merged with the ASI.

Indian heritage items and cultural repositories all over the country come under the purview of various agencies. Some are protected by the ASI, some are under the State government and some are under trusts, local authorities and private ownership.

"A big chunk of movable heritage is scattered all over the country without any vigilance. While theft of antiquities from Centrally Protected Monuments/sites under the ASI and under State governments is immediately reported and FIRs lodged, theft of unprotected antiquities makes retrieval very difficult," according to the Culture Ministry.

Therefore, the documentation of all such antiquities in the form of digitised records along with maintenance and periodic auditing of inventory is the first step to ensure the safeguarding of India's tangible cultural heritage.

Last week, the U.S. handed over 105 trafficked antiquities to India.

**BUSINESS & ECONOMICS****RESILIENT, BUT JUST**

The International Monetary Fund's latest update to its world economic outlook posits a global economy showing signs of having weathered its most recent challenges, including the bank collapses in the U.S. and Switzerland, and likely poised to expand by 3% in 2023. But the Fund's marginal 20 basis points upgrade to its April projections, which were released in the wake of the banking failures, and concerns at the time about the then yet-to-be-resolved U.S. debt ceiling standoff, does little to provide reassurance that the world economy is out of the woods. As the IMF's chief economist Pierre-Olivier Gourinchas cautioned on Tuesday, "many challenges still cloud the horizon... while some adverse risks have moderated, the balance remains tilted to the downside". That risks abound, both known and unsuspected, would be an understatement. For starters, the two largest economies, the United States and China, have slowed down appreciably and face increased uncertainty amid global and domestic headwinds. In the U.S., the surpluses from pandemic-era cash transfers, made to help families tide over the distress wrought by COVID-19 and the cost-of-living crisis in its aftermath, have all but depleted. China's post-reopening rebound has begun to fizzle out, with the economy floundering on the shoals of a contraction in the key real estate sector, combined with weakening consumption and slumping overseas demand for its exports.

The euro area, another key engine of the global economy, is still reeling from the Ukraine-war induced spike in gas prices with momentum decelerating especially in the largest regional economies of Germany and France. Eurozone business output fell at the fastest rate for eight months in July, S&P Global's latest HCOB flash PMI survey showed this week. Worse, deteriorating forward-looking indicators flag the likelihood of the region's downturn deepening in coming months. And with inflation, particularly core inflation, remaining well above central banks' targets, policymakers may be left with little option but to stay the course on inflation-taming but demand-retarding monetary tightening. Russia's termination of the Black Sea grain deal could also push up grain prices by as much as 15%, Mr. Gourinchas warned, affecting some low-income economies in Africa. The IMF economist also pointed to the heightened debt vulnerabilities among many frontier economies and stressed the urgent need for a concerted global debt resolution initiative to help highly indebted countries from sliding into debt distress. Ultimately, the world's economic leaders must realise that lopsided growth, that bypasses the vulnerable nations, risks having the weakest links weighing down the larger global economic edifice in an interconnected world.

DOWNHILL DRIVING

After hitting a record \$775 billion in 2022-23, India's exports are off to a rocky start this year. Outbound shipments of goods, that had crossed \$450 billion last year, have contracted 15.1% through the April to June 2023 quarter. June's provisional export tally, just shy of \$33 billion, was the lowest figure in eight months and reflected a 22% drop year-on-year, a scale of contraction last seen amid the initial months of the COVID-19 lockdowns. There has been a decline in the import bill as well over the first quarter, albeit at a slower pace than exports. This 12.7% dip is largely driven by the prevalence of lower commodity prices this year compared to the same quarter last year, when the import bill had shot up 44.5% after the Russia-Ukraine conflict erupted. Excluding gold and oil imports, the value of shipments coming into the country is down 10.5% in the first quarter. Sequentially, the decline in non-oil, non-gold imports has accelerated

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from 2% in May to 16.7% in June, indicating that domestic demand triggers are also ebbing. While this implies the goods trade deficit may not widen as it had last year, it does not augur well for domestic growth impulses that form India's key armour against the gathering global slowdown.

Services exports are still growing but at a far more sombre pace. That IT majors, who drive most of these intangible exports, have been tentative and decidedly downcast about their earnings guidance for this year, indicates the tide may get worse. Frail global demand may not just impact trade flows but also hurt foreign direct investments even as tightening monetary policies could exacerbate financial market volatility. As the Finance Ministry noted recently, if these trends deepen, the 6.5% growth hopes for the year could wobble. But retail sales in the U.K. have improved in June, although fractionally. The U.S. Treasury Secretary Janet Yellen has exuded confidence that a recession in the world's largest economy may be averted after all. Inflation numbers have eased in Europe and the U.S., triggering hopes of interest rate pauses instead of further tightening to throttle demand and activity. While driving on the hills, one has to prioritise the movement of vehicles climbing up, even if that means reversing a descending automobile up to a point of safe passage. Within the overall downhill trend of exports, the few bright spots such as rising shipments of electronic goods must flourish while trade curbs or obstacles affecting other products must be reviewed. Indian policymakers should redouble efforts to improve competitiveness vis-à-vis rivals such as Vietnam, and keep a closer watch on divergent trends in different markets to help exporters capture incremental, even if fractional, global demand.

EXPRESS VIEW: INDIA'S ROAD TO 2047

In his Independence Day speech last year, Prime Minister Narendra Modi laid out his vision for India to achieve developed country status by the 100th year of its independence. This is undoubtedly an ambitious target. With a per capita income of \$2,388 in 2022, India is currently classified by the World Bank as a lower middle income country. Considering that the IMF expects the country's per capita income to rise to \$3,720 by 2028, it is unlikely to achieve upper middle income status (those with per capita incomes currently between \$4,256-13,205) by the end of this decade. Achieving developed country or high income status by 2047 may seem like a tall order — but it is not impossible. A recent study by economists at the Reserve Bank of India provides some clues on the growth trajectory needed to hit the target.

Currently, countries with per capita incomes exceeding \$13,025 are classified as high income by the World Bank. Adjusting for inflation over the coming decades, the study estimates that a country's per capita income would need to exceed \$21,664 in 2047 to be classified as high income. To achieve this goal, nominal per capita GDP (USD) will have to grow at 9.1 per cent per year during this period. In real GDP terms (rupee), that works out to 7.6 per cent. Achieving this will be difficult — the study notes that even during the best 25-year period between 1993-94 to 2017-18, India did not achieve these growth rates. And this was a period marked by high inflation. So, can India realistically grow at the required pace for the next 25 years? Past trends show that while countries do witness spurts of growth, sustained high growth over decades, needed for the transition from middle to high income levels, is trickier.

Countries that have transitioned towards high income status are marked by two characteristics — “the conscious decision to industrialise and focus on external trade”. This, however, has been the core challenge of India's development trajectory. While successive governments have attempted to address the gaps in order to boost manufacturing and, as a consequence, merchandise exports, the sector's share has not reached the levels envisaged. The study expects that manufacturing's share should increase to 25 per cent of value added. Clearly, a business as



usual approach will not suffice. The report notes that if the status quo is maintained, then the projected growth falls well below what is needed to achieve developed country status in the prescribed timelines. The policy prescription outlined in the study underlines the urgent need to increase investments in the economy, reduce logistics costs, focus on skilling the labour force, investing more in health and education, and scaling up R&D, among others. To achieve the ambitious target laid out by the prime minister, concerted efforts are needed. There is no room for delay or complacency.

3RD LARGEST ECONOMY IN 3RD MODI TERM? ANATOMY OF INDIA'S GROWTH

Inaugurating the newly built International Exhibition-cum-Convention Centre (IECC), named Bharat Mandapam, in New Delhi on Wednesday, Prime Minister Narendra Modi said that when he took charge in 2014, India was the tenth-largest economy in the world. During his second term as PM, he said, India had become the fifth-largest economy. "I want to assure that during the third tenure of our government, India will be among the top three economies of the world," he said.

The data sourced from the International Monetary Fund (IMF) show that India is indeed forecast to become the third-largest economy by 2027 — smack in the middle of what could be Modi's third term as PM — as it is expected to overtake both Germany (currently fourth largest) and Japan (currently third largest).

The explanation for how India has been rapidly overtaking so many countries is two-fold — since overtaking other economies is a relative exercise, and one must look at the growth achieved by India as well as the other countries.

India's GDP has grown by 83% between 2014 and 2023. This is just a shade lower than the 84% increase achieved by China during this period. The US GDP increased by 54%. However, barring these three countries, all the other top 10 countries have seen their GDP stagnate or even contract.

India's GDP has grown by 83% between 2014 and 2023. This is just a shade lower than the 84% increase achieved by China during this period. The US GDP increased by 54%. However, barring these three countries, all the other top 10 countries have seen their GDP stagnate or even contract.

Of the five countries that India overtook in the 9 years since 2014, the UK's total GDP has grown by a total of 3%, France's by 2%, Russia's by 1%. Italy's GDP has not grown at all while Brazil's GDP has contracted by 15%.

So the reason for India leapfrogging some of these big economies is two-fold: while India's GDP grew by 83%, other competing countries stagnated. A key reason for this stagnation was the Global Financial Crisis (GFC) of 2008-09. The GFC hit India's economy, too, but the impact was nowhere near as disastrous as it was for the European countries.

This story is likely to continue even in the coming years. Despite India's economy not growing as fast as it would like to (read 8%-9% per annum), even a more modest growth rate of 6% per annum will be enough for India to overtake Germany and Japan by 2027.

India's GDP in 2027 will be around 38% more than what it is in 2023, while that of Japan and Germany will be only 15% more than their 2023 levels. This relatively faster growth will help India overtake these countries, and become the third-largest economy by 2027.



The data show two other noteworthy points. One, notwithstanding the relative success, India's growth momentum has slowed down considerably between 2014 and 2023 when compared with the 2004-2014 period (when GDP grew by a total of 183%).

Two, moving from rank 10 to rank 5 was relatively easier because the GDPs were within \$1 trillion of each other. The gap between the third rank and the first two is far greater. In 2027, India's GDP will be one-fifth of China's (short by \$20 trillion) and one-sixth of the US (short by \$26 trillion).

Lastly, one should not forget that these are aggregate numbers for the whole country. Actual prosperity is better captured by per capita GDP numbers. Here, the gap is way too much. At \$2,600 per annum, India's per capita GDP is not only the lowest among the top 10 countries but considerably lower than that of the countries it has overtaken, such as \$47,000 in the UK or \$10,000 in Brazil or \$37,000 in Italy.

GOVT. APPROVES 8.15% INTEREST RATE FOR PF DEPOSITS IN 2022-23

The Centre on Monday accepted the recommendation of the Central Board of Trustees (CBT) of the Employees' Provident Fund Organisation (EPFO) to increase the interest rate of deposits in Provident Fund (PF) to 8.15%. The new rate will be applicable for last financial year.

The CBT had recommended an increase to 8.15% from 8.10% interest to the deposits on March 28, 2023. The Labour Ministry had forwarded the CBT's recommendation for the Union Finance Ministry's approval. In the last financial year, trade unions had complained of delay in crediting the interest into the accounts of employees. The EPFO had cited technical reasons for the delay. The unions had also complained that the rate of 8.10% was the lowest in recent past and had demanded an increase. In 2020-21, the rate was 8.5%.

BANKS WRITE OFF BAD LOANS WORTH RS 2.09 LAKH CRORE IN 2022-23: RBI

Banks wrote off bad loans worth over Rs 2.09 lakh crore (around US \$ 25.50 billion) during the year ended March 2023, taking the total loan write-off by the banking sector to Rs 10.57 lakh crore (around \$ 129 billion) in the last five years, the Reserve Bank of India (RBI) said in a Right to Information (RTI) reply.

This huge loan write-off aided banks to bring down gross non-performing assets (GNPA) – or loans defaulted by borrowers — to a 10-year low of 3.9 per cent of advances in March 2023. Gross NPAs of banks had fallen from Rs 10.21 lakh crore in FY2018 to Rs 5.55 lakh crore by March 2023, mainly on the back of loan write-offs by banks. Banks have written off a whopping Rs 15,31,453 crore (US \$ 187 billion) since FY2012-13, as per RBI data.

However, what's to be noted is that loans written off by banks will remain in the books of banks as unrecovered loans. The central bank RTI reply says banks recovered only Rs 109,186 crore from Rs 586,891 crore loans written off in the last three years, revealing that they could only recover 18.60 per cent of the write-offs during the three-year period. The total defaulted loans (including write-offs but excluding loans recovered from write-offs in three years) amount to Rs 10.32 lakh crore, according to back of the envelope calculation. Including write-offs, the total NPA ratio would have become 7.47 per cent of advances as against 3.9 per cent reported by the banks.

The RBI's RTI reply to The Indian Express says that loan write-offs by banks rose to Rs 209,144 crore during the fiscal ended March 2023 as against Rs 174,966 crore a year ago in March 2022 and Rs 202,781 crore in March 2021. Banks have been writing off defaulted loans to reduce the

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NPAs in their books. However, banks have reported abysmal recoveries from the written off loans – they could recover only Rs 30,104 crore in FY21, Rs 33,534 crore in FY22 and Rs 45,548 crore in FY23.

When a loan is written off by a bank, it goes out from the asset book of the bank. The bank writes off a loan after the borrower has defaulted on the loan repayment and there is a very low chance of recovery. The lender then moves the defaulted loan, or NPA, out of the assets side and reports the amount as loss. “After write-off, banks are supposed to continue their efforts to recover the loan using various options. They have to make provisioning also. The tax liability will also come down as the written off amount is reduced from the profit,” said a banking analyst.

A loan becomes an NPA when the principal or interest payment remains overdue for 90 days.

While many big and small defaulted loans were written off by banks over the years, the identity of these borrowers was never revealed by banks or the RBI. Among individual banks, reduction in NPAs due to write-offs in the case of State Bank of India was Rs 24,061 crore in FY2023, Punjab National Bank Rs 16,578 crore, Union Bank Rs 19,175 crore, Central Bank of India Rs 10,258 crore and Bank of Baroda Rs 17,998 crore.

The writing off NPAs is a regular exercise carried by banks to clean up the balance sheet. “A substantial portion of this write-off is, however, technical in nature. It is primarily intended at cleansing the balance sheet and achieving taxation efficiency. In ‘Technically Written Off’ accounts, loans are written off from the books at the Head Office, without foregoing the right to recovery. Further, write-offs are generally carried out against accumulated provisions made for such loans. Once recovered, the provisions made for those loans flow back into the profit and loss account of banks,” the RBI had earlier said in an explanatory note. Not surprisingly, according to the RBI, public sector banks reported the lion’s share of write-offs at Rs 366,380 crore accounting for nearly 62.45 per cent of the exercise in the last three years.

The RBI guidance on write-offs says that in a deregulated credit environment, banks have been advised to take credit related decisions including waiving off bad loans as per their commercial assessment of the viability of the loans in terms of their board approved policies subject to prudential norms issued by the RBI. The policy on loan recoveries is required to lay down the manner of recovery of dues, targeted level of reduction (period-wise), norms for permitted sacrifice or waiver, factors to be taken into account before considering waivers, decision levels, reporting to higher authorities and monitoring of write-off and waiver cases.

However, the recovery process can take years as most of the loans involved in write-offs belong to wilful defaulters and shady promoters who generally don’t pay back to the banks. “It’s non-transparent and it’s without any policy. There’s possibility of wrong-doing. Generally, write-off is supposed to be small, used sparingly when there’s some crisis. Technical write-off creates non-transparency, destroys the credit risk management system and brings all types of wrong-doings into the system. You must declare how much you’re writing off. You’re writing off public money. It’s a scandal. You’re writing off public money you’re not acknowledging,” said a former RBI official.

According to the RBI’s Financial Stability Report (FSR) for June 2023, if the macroeconomic environment worsens to a medium or severe stress scenario, the GNPA ratio may rise to 4.1 per cent and 5.1 per cent, respectively.



FULL-RESERVE BANKING: WHERE BANKS ACT SOLELY AS CUSTODIANS OF CUSTOMERS' MONEY

Full-reserve banking, also known as 100% reserve banking, refers to a system of banking where banks are not allowed to lend out money that they receive from customers in the form of demand deposits. Demand deposits are deposits that customers can withdraw from the bank at any point in time without any prior notice. So, under full-reserve banking, banks are mandated to hold all money that they receive as demand deposits from customers in their vaults at all times. In this case, banks simply act as custodians to depositors' money and may charge a fee from depositors for the service of safekeeping that they offer to the depositors. This is in contrast to today's banking system in which banks pay interest to customers on their demand deposits. In other words, under full-reserve banking, banks are expected to hold reserves backing 100% of their liabilities in the form of demand deposits. This is to ensure that banks can successfully meet redemption demands from depositors, and thus avoid a run on the bank even if all depositors someday decide to come asking for their money at the same time.

(Un)conditional lending

Under a full-reserve banking system, banks can only lend money that they receive as time deposits from their customers. Time deposits are deposits that customers can withdraw from the bank only after a certain period of time that is agreed upon between the bank and its customers. This arrangement gives banks the time to lend these deposits to borrowers at a certain interest rate, collect repayments from the borrowers, and finally repay depositors their money along with a certain amount of interest.

In the banking system that exists today, also known as the fractional-reserve banking system, banks predominantly do not lend money in the form of physical cash. So the cash deposits that they receive from their customers, whether as demand deposits or as time deposits, mostly stay in their vaults. Still, banks face the risk of a depositor run for a different reason — banks lend more money than the cash they have in their vaults. This is made possible because most lending to various borrowers happens in the form of electronic money. A bank that wants to lend money can simply open a loan account in its books under the name of a certain borrower and credit the account with electronic money equivalent to the loan amount. In fact, the value of such electronic loans created by banks out of thin air can turn out to be many times the actual amount of cash in the banks' vaults. So, if borrowers decided to withdraw in the form of cash all the money that was loaned to them electronically by the bank, the bank may be forced to use all the cash deposits that it received from depositors to meet the demand for cash and still be unable to meet the demand for cash. This can cause a run on the bank as the bank has created loans far exceeding the amount of actual cash in its vaults. However, bank runs rarely happen for a number of reasons. For one, most transactions in today's economies happen through checks and other non-cash instruments which ensure that the demand for cash remains minimal. So, banks rarely face the imminent risk of a large number of their customers suddenly showing up at their door demanding cash from their accounts immediately. Secondly, central banks bail out banks by providing them with any emergency cash that they may need to meet a sudden rise in the cash demands of customers.

The need to fuel growth

Under a full-reserve banking system, however, banks are prohibited from creating loans without actual cash in their vaults to back these loans.



In fact, some economists have argued that it should be considered as fraudulent practice if a bank issues loans without the necessary cash in its vaults to back their loans. Supporters of fractional-reserve banking, however, believe that full-reserve banking unnecessarily restricts bank lending. They believe that allowing banks to create loans without the necessary savings to back these loans can help spur investment and economic growth.

In other words, proponents of fractional-reserve banking believe that such banking frees the economy from having to rely on real savings from depositors to finance the huge investments required to fuel growth.

Proponents of full-reserve banking argue that it is the only natural form of banking and that it can prevent the various crises that affect today's fractional-reserve banking system. Since banks will be allowed to make loans to borrowers only out of their time deposits and since they will be legally forced to keep demand deposits in their vaults to meet depositor demands for cash, the chances of a bank run would be negligible under a full-reserve banking system. Supporters of full-reserve banking also argue that since banks will not be able to create money out of thin air in a full-reserve banking system, their influence on the economy's money supply will become severely restricted. This, they argue, will prevent artificial economic booms and busts that are said to be the consequence of changes in money supply.

TO TAP GLOBAL CAPITAL, INDIAN FIRMS CAN LIST DIRECTLY ON IFSC EXCHANGES: FM

Finance Minister Nirmala Sitharaman Friday said the government has decided to enable listed and unlisted domestic companies to directly list their equity shares on the International Financial Services Centre (IFSC) at Ahmedabad. The decision will facilitate access to global capital and result in a better valuation of the Indian companies, she said at the launch of the Corporate Debt Market Development Fund (CDMDF) and AMC Repo Clearing Ltd (ARCL).

the direct listing of listed and unlisted companies on the IFSC exchanges," Sitharaman said.

The facility will be operationalised shortly and will enable start-ups and companies of like nature to access the global market through GIFT IFSC.

The existing legal framework in the country does not permit the direct listing of equity shares of companies incorporated in India on foreign stock exchanges. The only available routes for companies incorporated in India to access the equity capital markets of foreign jurisdictions are through the American Depository Receipts (ADR) and Global Depository Receipts (GDR) regimes.

In 2018, a Sebi-appointed expert committee made certain recommendations for listing equity shares of domestic companies on foreign exchanges.

Highlighting the reforms undertaken by the government over the last few years, Sitharaman said one of the major steps that the government has taken is to consolidate the laws dealing with the securities market in the country into a single Securities Market Code.

"This is vital as it is intended to consolidate the three different laws – the SCRA (Securities Contracts (Regulations) Act) of 1956, SEBI Act of 1992, and the Depositories Act of 1996 – into a single Act with updated and rationalised provisions," she said.

The Code is intended to be future-ready, and will take into account developments from a long-term perspective and promote ease of doing business, the finance minister said, adding that it will



cater to the developmental and regulatory needs of the country's capital market, which is witnessing rapid growth.

CDMDF launched today by the finance minister will act as a backstop facility for the purchase of investment-grade corporate debt securities to instil confidence amongst the participants in the corporate debt market during times of stress.

The fund will provide stability to the corporate bond market during times of stress through an asset purchase mechanism.

With the support of Rs 30,000 crore from the Central Government, in the form of a guarantee, and over Rs 3,000 crore of corpus coming from the mutual fund industry, the CDMDF will have access to capital of over Rs 33,000 crore.

The limited purpose clearing corporation mechanism – AMC Repo Clearing Ltd (ARCL)- is aimed at widening and deepening the corporate bond market in the country.

FAST AND FURIOUS: WHEN INSTANT LOAN APPS TURN TO ABUSE, MORPH PHOTOS TO BLACKMAIL

Chinese moneylending firms that operate in a haze of loose regulations and poor documentation have come under the scanner of investigators for providing instant short-term loans to the public through loan apps and following that up with exorbitant interest rates, as high as 2,000 per cent, and letting loose loan recovery agents on unsuspecting borrowers.

An Enforcement Directorate (ED) investigation on loan apps conducted earlier this year revealed that in each of these cases, nearly 30-40 per cent of the loan amount was deducted as processing fees and the effective interest rate was as high as 2,000 per cent per annum. The ED investigation was done on the basis of 18 cases registered with the CID cyber crime police station in Bengaluru.

“They provided instant short-term loans to the public through loan apps and other means, and charged high processing fees and exorbitant rates of interest, and amounts were subsequently recovered from the public by these companies by way of threatening and causing mental torture to the borrowers of the loans over the phone as well as contacting their family members, relatives and friends for the money,” the ED had said in March, after seizing assets to the tune of Rs 106 crore linked to a “Chinese loan app” racket.

The modus operandi

According to police, the essential modus operandi in the instant online loan app business involves businesspersons (mostly Chinese) tying up as technology service providers for registered non-banking finance companies (NBFCs) in India.

The Chinese firms then tie-up with payment gateways and create a web of small private companies to funnel the funds to borrowers. These firms then employ telecallers to hustle for payments and later transfer the funds back to China.

According to the Bengaluru police, NBFCs only lend their credentials to the Chinese firms, which go on to disburse and collect loans through a network of small firms that have telecallers and office boys as their directors. The Bengaluru Central Crime Branch (CCB) police investigation has revealed the use of mobile apps such as Cash Master, Crazy Rupee, IRupee, Cashin, Rupee Menu, ERupee and others in giving unsecured loans at exorbitant interest rates and processing fees.

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



“During investigation, it was revealed that the moneylending business is actually being run illegally by fintech companies. These NBFCs knowingly let these fintech companies use their names for the sake of getting commission, without being careful about the conduct of these fintech companies,” the ED had said in March this year after a crackdown on instant loan app firms.

S Badrinath, Deputy Commissioner of Police (Crime) in Bengaluru, said, “Most activities are legal and permitted by RBI. It is the harassment that is illegal. These instant loan apps, when downloaded, grab the entire data in one’s phone — contacts, pictures, everything. And that is what is used to torment people when they default on repayments of loans. Pictures are morphed and sent to contacts in an effort to shame a defaulter into repaying the loan.”

Although fintech firms that float the loan apps are linked to Chinese nationals, no Chinese national has been arrested in connection with the cases in Bengaluru. “Most of the main people behind the fintech companies have left the country. It is the Indian directors and firms linked to the network that are being pursued,” a senior Bengaluru police official said.

An officer added, “There has been a loophole in the policy for lending online that has been exploited by these instant loan app firms to carry out business. This loophole has to be plugged.” According to the police, there is no clearly stated policy by banking authorities on online lending by NBFCs, a loophole that has been exploited by Chinese fintech firms.

A set of guidelines issued by RBI on June 8 on digital lending and the move to approve a First Loss Default Guarantee (FLDG) programme is expected to curb these fly-by-night lenders operating loan apps. The FLDG is a formal agreement signed by fintech firms with banks and NBFCs that helps the latter cover for losses over defaults in loan repayments.

Defaults in the case of instant loan apps are often high since loans are provided without checking the credit record of a customer. The new policy, which brings fintechs under RBI guidelines, will require fintechs to pay banks and NBFCs a guarantee amount to cover for losses due to defaulting customers.

“This move could restrict rampant lending by loan apps,” said Raman Gupta, Bengaluru Additional Commissioner of Police (East), who has in the past been involved with investigations of Chinese loan app firms by the ED.

SEBI CHIEF SAYS INSTANT SETTLEMENT OF TRADES IN THE WORKS: WHAT DOES IT MEAN, AND HOW WILL INVESTORS BENEFIT?

The securities market regulator has said it is working on real-time settlement of transactions in India’s stock exchanges. The announcement by Madhabi Puri Buch, chairperson of the Securities and Exchange Board of India (SEBI), came after the regulator shortened the settlement cycle to trade-plus-one (T+1) from T+2.

What is meant by trade settlement?

‘Settlement’ is a two-way process that involves the transfer of funds and securities on the settlement date. As of now, there is a lag between trade and settlement — the settlement date is different from the trade date. A trade settlement is said to be complete once purchased securities of a listed company are delivered to the buyer, and the seller gets the money.



The current cycle of 'T+1' in India means trade-related settlements happen within a day, or within 24 hours of the actual transaction. The migration to the T+1 cycle came into effect in January this year.

India became the second country to start the T+1 settlement cycle in top listed securities after China, bringing operational efficiency, faster fund remittances, share delivery, and ease for stock market participants.

What has SEBI announced now?

SEBI has said it is working on a plan for "instantaneous" settlement of trades in the securities market.

"Certainly, one of the things that we think is not very far off is the instantaneous settlement on the stock exchanges. We are currently working on that. We are also engaged with the ecosystem. We believe that in future we will have a mechanism which will facilitate instantaneous settlement of transactions on stock exchanges," Chairperson Buch said.

Same-day, or 'T+0', settlement of trades will be possible with the real-time payment system — Unified Payments Interface (UPI), online depositories, and technology stack, she said.

What will change for investors with T+0?

Under the current T+1 settlement cycle, if an investor sells securities, the money gets credited into her account the following day. Under the T+0 settlement cycle, if investors sell shares, they will get the money in their account instantaneously, and the buyers will get the shares in their demat accounts the same day.

"The investor's money will not get stuck with brokers or stock exchanges, they will get the money on the same day after the transactions happen," a market participant said.

When is the migration to T+0 expected?

The SEBI chairperson said the shift to instant trade settlement will need some more work.

"If the ASBA (in the secondary market) goes smoothly, then the next step is instantaneous settlement," she said.

In March this year, SEBI approved a framework for an Application Supported by Blocked Amount (ASBA)-like facility for trading in the secondary market. It is aimed at safeguarding investors' money which is with stockbrokers, and also at bringing transparency.

WHY SEBI IS REVIEWING DELISTING NORMS, AND MAY CHOOSE THE 'FIXED PRICE' METHOD

The Securities and Exchange Board of India (SEBI) is reviewing delisting regulations for listed companies in an attempt to rein in the manipulation of shares of a company that has opted for delisting from the stock exchanges.

The capital markets regulator has said it may allow companies to delist shares at a fixed price, as against the current 'reverse book-building' process.



What does delisting of securities mean?

Delisting means removing the securities of a listed company from a stock exchange. Once delisted, the securities of that company can no longer be traded on the stock exchange.

Delisting can be either voluntary or compulsory. In voluntary delisting, a company decides on its own to remove its securities from a stock exchange; in compulsory delisting, they are removed as a penal measure for the company not making submissions or complying with requirements set out in the listing agreement within the prescribed timeframes.

If a company wants to delist its securities, it needs to buy back 90% of the total issued shares.

What is the reverse book-building process?

Reverse book-building is the process used for price discovery. During the period for which the reverse book-building is open, offers are collected from shareholders at various prices, which are above or equal to the floor price. The buyback price is determined after the offer closing price.

So what is the problem with this process?

SEBI chairperson Madhabi Puri Buch said that certain constituents in the market, in anticipation of the delisting, acquire shares and jack up the price of shares to unsustainable levels.

“Because of the way in which it (the reverse book-building process) is formulated, and because of the 90% threshold, there is a possibility of misuse by certain operators who are specialists in the delisting of shares. We know that,” she said.

“Their business model is, wherever there is an anticipation of delisting, to go and garner 10% or more (shares) amongst their own like-minded persons. And at the time the delisting proposal comes, to extract a higher price, which need not always be a fair price,” she said.

Buch said that if the price of a share that has been in the market for a reasonable period of time jumps up by, say, 70% only because of delisting, it may not be a fair price. “When we talk about fairness, it has to be fair to all parties concerned. Not just to one constituent,” she said.

Pranav Haldea, managing director of the Prime Database Group, said the issue in the delisting process is to balance the interests of the promoters and shareholders. “At present, the 90 per cent threshold does pose a huge challenge,” Haldea said.

What is the SEBI’s review about?

SEBI has said it has been thinking of reviewing delisting regulations for some time now. The regulator has said it has received the recommendations of the committee headed by Keki Mistry, the former vice-chairman and CEO of HDFC Ltd, on delisting norms, and it would soon seek comments from various stakeholders on it.

The regulator said it may allow companies to delist shares at a fixed price instead of using the reverse book-building mechanism. “We will say that if you have a requirement for delisting, you can also have a fixed price. You can try (delisting) with a fixed price. If that doesn’t work, try reverse book-building,” Ashwani Bhatia, Whole Time Member of SEBI, said.

A consultation paper on delisting norms may be released before December.



But how will a fixed price method benefit shareholders?

The benefits can be assessed only after SEBI announces the methodology to arrive at the fixed price, market experts said, cautioning that the “devil is in the detail”. “While fixed price methodology can help in resolving some of the present issues, it would depend on what the formula will be to arrive at this fixed price,” Haldea of Prime Database said.

According to Akila Agrawal, partner & head (merger and acquisition) at Cyril Amarchand Mangaldas, currently, apart from the price discovery, promoters have to meet other thresholds such as receipt of minority shareholder consent, and reach 90% shareholding in order to successfully delist. And the process will become easier only if all aspects — not just the price — are reviewed holistically.

ECONOMIC CENSUS: PARLIAMENTARY PANEL QUESTIONS MINISTRY OVER DELAY IN RESULTS

A parliamentary panel has questioned the Ministry of Statistics and Programme Implementation (MoSPI) over the delay in the release of the economic census results, pointing out in a report tabled Thursday in Parliament that only 13 states and Union Territories have communicated their approval for provisional results so far.

The seventh economic census was launched in 2019 and completed in March 2021. The Standing Committee on Finance pointed out that MoSPI’s response on the seventh economic census “falls short in providing a proactive approach” to address the delays.

“Moreover, the response highlights that as of April 30, 2023 only 13 states/UTs have communicated their approval on the 7th Economic Census provisional results indicating lack of progress in obtaining approvals from the State Level Coordination Committees. The response of the government also does not provide clear information on how it plans to implement these recommendations,” the committee’s report said.

The committee has asked the ministry to “accelerate data collection, foster close collaboration with states and ensure timely approval of the provisional results by the state-level coordination committees”, adding that the panel should be apprised about states facing statistical capacity constraints in terms of providing data.

The ministry informed the parliamentary panel that data collection and supervision for the seventh economic census were affected due to several operational challenges including the pandemic. The seventh economic census results are yet to be finalised as approval of provisional results is yet to be obtained from various state-level coordination committees. This is not the first time that the parliamentary panel has questioned the delay in release of results of the seventh economic census. It had questioned the ministry for the same earlier in March as well.

An economic census provides an updated sampling framework for follow-up enterprise surveys undertaken for detailed analysis of all establishments in the country and covers all establishments including household enterprises, engaged in production or distribution of goods/services (other than the purpose of own consumption) in non-farm agricultural and non-agricultural sectors. For the seventh economic census, MoSPI had partnered with CSC e-Governance Services India Limited, a special purpose vehicle under the Ministry of Electronics and Information Technology as the implementing agency.



CAN NEW DATA PANEL IMPROVE INDIA'S STATISTICS?

The story so far:

The Ministry of Statistics and Programme Implementation has formed a new Standing Committee on Statistics (SCoS) to advise on official data generated by the National Statistical Office (NSO). This panel, chaired by former National Statistical Commission chief and India's first Chief Statistician Pronab Sen, will replace another committee headed by him that was formed in 2019 to advise on economic data.

What is different about the new committee?

The Standing Committee on Economic Statistics was mandated to review the framework for economic indicators such as those pertaining to the industrial and services sectors, along with labour force statistics. This meant its focus was limited to reviewing high-frequency data like the Index of Industrial Production (IIP) and the Consumer Price Index (CPI), apart from surveys and enumerations like the Economic Census, Annual Survey of Industries and the Periodic Labour Force Survey. The SCoS, as per the order issued by the Ministry on July 13, has "enhanced terms of reference" that enable it to advise the Ministry not just on all existing surveys and data sets, but also identify areas where data gaps exist, suggest ways to fill them and carry out pilot surveys and studies to finetune new approaches for capturing better data. The new committee is also half the size of the 28-member panel that was reviewing economic data.

Mr. Sen is accompanied by seven academics, including former Institute of Economic Growth professor Biswanath Goldar, National Council for Applied Economic Research professor Sonalde Desai, and Mausami Bose, professor at the Indian Statistical Institute. "Traditionally, the NSO used to appoint committees to advise on design and methodology for Surveys," said a veteran statistician. "However, this panel has a wider mandate as it can also proactively work on issues beyond the surveys for which the Ministry seeks their guidance," he pointed out. For instance, one of the items on SCoS' agenda is to explore the availability of administrative statistics that can be useful for surveys and generating more data.

Why does it matter?

In recent years, the credibility of some of NSO's data, especially the results of various household surveys traditionally carried out by the National Sample Survey Office (NSSO) have come under a cloud, with even top government officials questioning their approach and outcomes. In 2019, the government had decided to junk the results of two major NSSO household surveys carried out in 2017-18 — to assess the employment and consumption expenditure levels in Indian households — by claiming they suffered from "data quality issues". The actual rationale for withholding the outcome of the last surveys, carried out soon after demonetisation and the implementation of the Goods and Services Tax (GST), is believed to be that they revealed distress in households. A similar dilemma had arisen for policy makers when these surveys, carried out every five years, revealed a not-so-enthralling picture when they were conducted in 2009-10, soon after the global financial crisis. But the government went ahead and published those findings and decided to do fresh surveys in 2011-12 to filter out the ill-effects of the 2008 crisis.

However, after the 2017-18 Surveys were junked, a fresh Household Consumption Expenditure Survey (HCES) was started only last July and its results may take at least another year to be finalised. In the absence of this data, India's key economic indicators such as retail inflation, GDP



or even the extent of poverty, usually revised based on evolving consumption trends, continue to be based on the 2011-12 numbers, and are divorced from contemporary ground realities. It compels the government to rely on proxy data such as Employees' Provident Fund (EPF) account numbers to gauge employment trends and the National Family Health Survey to assess poverty levels.

How can the SCoS bridge the trust deficit surrounding official data?

While it can advise the Statistics Ministry on individual surveys and data sets, the new panel is also expected to help address issues raised "from time to time" on the results and methodology of surveys. With survey design and features evolving, the panel can seek to sensitise data users about the nuances involved to ensure better interpretation of the numbers. Most importantly, the SCoS, which will help the NSO finalise survey results and, the independent National Statistical Commission that is empowered to assess whether any official data is fit for release, must seek to rebuild the credibility of India's statistics.

IS THERE A RURAL BIAS IN NATIONAL SURVEYS?

The story so far:

The Government of India recently appointed a panel under the chairmanship of Pronab Sen, former Chief Statistician of India to review the methodology of the National Statistical Organisation (NSO).

Why is there a need for review?

This happened in the backdrop of articles by Shamika Ravi and Bibek Debroy arguing that the usage of outdated survey methodology by national surveys such as the National Sample Survey (NSS), National Family Health Survey (NFHS) and Periodic Labour Force Survey (PLFS), have systematically underestimated India's development. According to them, this archaic methodology has failed to capture reality in the recent past as the "Indian economy has been incredibly dynamic in the last 30 years". On the other hand, P. C. Mohanan and Amitabh Kundu have reasoned that there is no systematic underestimation of development by these national surveys. Therefore, there is no need for restructuring and overhauling the survey methodology just because it doesn't suit certain narratives of development. However, they accept that there may be errors, which should be minimised. They also advocate the usage of appropriate sample weights to make the national sample adequately representative.

Why is it important?

National level data is a key resource for research, policymaking and development planning, so it is of utmost importance to understand and analyse both claims in the light of existing evidence. For this purpose, we will be taking a closer look at NFHS data, which is being conducted by the Ministry of Health and Family Welfare for the last 30 years with the International Institute of Population Sciences (IIPS) as the nodal agency.

Does the NFHS have a rural bias?

Ms. Ravi and Mr. Debroy in separate articles have argued that one of the ways in which national surveys like the NFHS are underestimating Indian development is through "rural bias in terms of representation". In other words, the survey methodology, which depends heavily on the last



Census data, systematically overestimates the rural population. However, the examination of five rounds of NFHS data doesn't show any such systematic bias towards rural population. If we match the estimates of the urban population by the NFHS with the corresponding World Bank estimates and urban percentage projections from the Census figures of 1991, 2001 and 2011, it is clear that there is no evidence of any systematic rural bias (Table). On the other hand, there is evidence of rural population underestimation by NFHS-3. Overestimation of rural population seems to have taken place by NFHS-2 and NFHS-5. Only NFHS-1 and NFHS-4 estimates seem to be really close to World Bank estimates and projections based on Census data. However, these errors seem random rather than systematic.

How can we minimise such errors?

Generally, there are higher percentages of no-response in urban areas compared to rural areas. However, this also does not seem to have any systematic relation with either rural or urban bias in estimation. For example, NFHS-1 with its near correct estimation of urban population had the lowest urban response rate at 94.5%, while NFHS-5 with its underestimation of urban population had the second lowest urban response rate of 95.6%.

Nonetheless, no response or not, there seems to be room for improvement in minimising the errors and the way sample weights are assigned. A cursory glance at the percentages of the urban sample in the unweighted sample indicates that assigning appropriate weights may help to correct the errors to a great extent. In NFHS 1, 2, 3, 4 and 5 the unweighted percentages of urban sample were 31.0%, 31.3%, 44.2%, 28.0% and 24.2% respectively (Table). If the sample weights are appropriately assigned, after taking into account all possible sources of error, then underrepresentation of either rural or urban seems to get corrected to a large extent.

What next?

The Pronab Sen Committee needs to address these concerns to make the sample adequately representative rather than go for a complete overhaul of the survey methodology. In the name of removing systematic rural bias in survey methodology, which does not seem to exist in the first place, let us not import systematic urban bias rampant in policymaking, planning and financing to national level surveys. Let us remove the bias where it actually exists.

THE HAPPY APPLE GROWERS OF HIMACHAL

The apple season has started in Himachal Pradesh. This year is especially significant as a new practice has come into force: the State's key horticulture crop is being sold by weight instead of the established practice of being sold per box. While this decision has been widely hailed by apple growers, it has been reluctantly accepted by commission agents and middlemen.

For a long time, the apple growers of Himachal Pradesh had been demanding that apples be procured in markets (mandis) on the basis of weight (in kilogrammes) and not by box. This is because they would invariably sell their produce according to the weight of the box and not the real weight of the produce, which was usually higher than the weight of the box. This resulted in losses for apple growers. The key problem was that there were no standard cartons in which the apples were packed.

The woes of apple growers began when wooden apple boxes were replaced in the late 1990s with cardboard-based telescopic boxes. The wooden boxes were not flexible, which meant that the quantity of apples in every box would remain the same (around 20 kg). However, with the advent



of flexible telescopic cartons, boxes with a capacity of 20-24 kg each would end up in mandis with the produce weighing 30-35 kg at times. The apple growers complained that commission agents would arm-twist them into weighing the box. The commission agents, they said, would threaten not to buy the produce saying the apples were “loose or low grade” (small/poor quality) unless the grower compensated them by stuffing the box with extra apples. This would help the agents get more produce and make an additional profit after selling it to traders. The growers were left with no choice given the perishable nature of apples and the absence of an adequate number of controlled atmosphere chambers to store apples.

The commission agents assert that they are not against the government’s decision and that in the “interest of growers,” they are ready to procure apples by weight. But the problem, they say, is that in markets outside the State, apples are being procured per box. As a result, they assert that they are suffering huge losses. The State Arhtiya (commission agents) Association has made it clear that after the ongoing marketing season is over, they will clearly spell out their concerns.

After coming to power last December, the Sukhvinder Singh Sukhu-led Congress government held several rounds of talks with all the stakeholders. On April 6, 2023, the government issued a notification under the Himachal Pradesh Agricultural and Horticultural Produce Marketing (Development and Regulation) Act, 2005, which stated that apples brought in boxes to all the fruit markets of the State would be sold on the basis of weight, which would also include the weight of the packing material. The maximum limit of the weight of the box has been set at 24 kg. Influential commission agents resisted this and went on a symbolic strike for a day. This led to a tussle between apple growers and commission agents. The State government eventually prevailed by putting its foot down and saying that apples would be sold by weight instead of by box in the ongoing season.

Apple is the most important fruit crop of Himachal Pradesh. It constitutes about 49% of the total area under fruit crops and about 85% of the total fruit production. The apple economy of the State is an estimated ₹5,500 crore-6,000 crore. This is why the government’s decision is being seen as an attempt to woo voters in the apple belt, which is a politically significant area of the State, ahead of the 2024 general elections. The Lok Sabha polls will be a key test for the first-time Chief Minister, who recently led rescue operations from the front when floods wreaked havoc in the State. There are four parliamentary seats in the State: Mandi, Shimla, Kangra, and Hamirpur. Of the four, Shimla and Mandi seats have a substantial number of apple growers who will benefit from the government’s decision. Politically, the State is divided into upper and lower Himachal. Most of the apple growers belong to the upper Himachal region. They are the beneficiaries of Mr. Sukhu’s decision. The Chief Minister’s home town, Nadaun, is a part of lower Himachal. Therefore, Mr. Sukhu has signified that he is above regional politics and is taking decisions that are in the best interests of apple growers.

INDIA’S RICE EXPORT BAN IMPACTS ASIAN AND AFRICAN NATIONS MOST

In the last couple of days, many panic-stricken Non-Resident Indians (NRIs) have thronged grocery stores and supermarkets in the United States to hoard bags of rice. Videos of people jostling to buy sona masuri rice (a lightweight and aromatic medium-grain rice) and photos of long queues outside Indian stores became viral on social media. In order to control the chaos, many stores in the U.S. placed a limit on the sale of rice. Some even restricted sales to ‘one rice bag per family’ to deal with the unprecedented crowds.



This sudden rush followed the Indian government's decision on July 20 to ban the export of non-basmati white rice to "ensure adequate availability in the Indian market and to allay the rise in prices in the domestic market." It did not restrict the export of the other types of semi/wholly milled rice — basmati and parboiled rice.

In FY23, India exported around 64 lakh tonnes of non-basmati white rice and close to 45 lakh tonnes of basmati rice. The most widely exported type was parboiled rice (78 lakh tonnes). Now, non-basmati white rice, which formed over a quarter of semi/wholly milled rice, has been taken off the market.

Over 140 countries bought non-basmati white rice from India in FY23. The effect of the ban will be most pronounced in the neighbouring countries of Nepal and Bangladesh, the African countries of Madagascar, Benin, Kenya, and Ivory Coast, the Asian countries of Malaysia and Vietnam, and the UAE, which are all the biggest buyers of this type of rice in absolute terms.

Interestingly, the U.S. is ranked 34th on the list, with just over 27,000 tonnes of average imports per year. In contrast, Nepal bought 4.5 lakh tonnes per year in the considered period. Thirty three other countries are more impacted by the ban than the U.S. So, the hullabaloo over rice in the U.S. can be explained as a reporting bias. The data hints that a part of the rush in the U.S., which sources 80% of its needs from elsewhere (mostly Thailand), could also be due to panic buying or the preference of NRIs for Indian brands.

Back in India, the decision may bring relief to consumers as many of them, especially in the southern States, were paying over ₹50 for a kilo of rice. Climate change-related disasters such as extreme flooding in the north and relatively poor rainfall elsewhere have also impacted rice sowing this year.

ETHANOL+PETROL: HOW TO BLEND MORE AND BLEND BETTER

India's ethanol production programme has come a long way in the past five years, both in terms of the quantities supplied by sugar mills/distilleries to oil marketing companies (OMCs) and the raw material used — from cane molasses and juice to rice, damaged grains, maize and, down the line, millets.

Ethanol is basically 99.9% pure alcohol that can be blended with petrol. It is different from the 94% rectified spirit having applications in paints, pharmaceuticals, personal care products and other industries, and 96% extra neutral alcohol that goes to make potable liquor.

Prime Minister Narendra Modi, at a G20 Energy Ministers' meet on Saturday (July 22), said that India has rolled out 20% ethanol-blended petrol this year and aims to "cover the entire country by 2025".

Cane options

Till 2017-18 (December-November supply year), sugar mills produced ethanol only from 'C-heavy' molasses. The cane they crush typically has 13.5-14% TFS or total fermentable sugars content. Around 11.5% of it is recovered from the juice as sugar, with the uncrystallised, non-recoverable 2-2.5% TFS going into so-called C-heavy molasses. Every one tonne of C-heavy molasses, containing 40-45% sugar, gives 220-225 litres of ethanol.



But mills, instead of extracting the maximum recoverable 11.5%, can produce 9.5-10% sugar and divert the extra 1.5-2% TFS to an earlier 'B-heavy' stage molasses. This molasses, containing 50% plus sugar, yields 290-320 litres per tonne.

A third route is not to produce any sugar and ferment the entire 13.5-14% TFS into ethanol. From crushing one tonne of cane, 80-81 litres of ethanol can thus be obtained, as against 20-21 litres and 10-11 litres through the B-heavy and C-heavy routes respectively.

Feedstocks diversification

The table shows ethanol supplies by mills/distilleries to OMCs soaring from a mere 38 crore litres in 2013-14 to an estimated 559 crore in 2022-23. Moreover, there has been a significant diversification of feedstocks from C-heavy to not only B-heavy molasses and direct sugarcane juice, but even rice and other foodgrains.

The ethanol impetus

Ethanol yields from grains are actually higher than from molasses. One tonne of rice can produce 450-480 litres of ethanol, while it is 450-460 litres from broken/damaged grains, 380-400 litres from maize, 385-400 litres from jowar (sorghum) and 365-380 litres from bajra and other millets. The yields are linked to starch content: 68-72% in rice, 58-62% in maize and jowar, and 56-58% in other millets.

However, though more ethanol can be produced from grains than molasses, the process is longer. The starch in the grain has to first be converted into sucrose and simpler sugars (glucose and fructose), before their fermentation into ethanol by using yeast (*saccharomyces cerevisiae*). Molasses already contains sucrose, glucose and fructose.

The boost

The flexibility and incentive for mills/distilleries to use multiple feedstocks has largely come from the Modi government's policy of differential pricing. Till 2017-18, the OMCs were paying a uniform price for ethanol produced from any feedstocks.

From 2018-19, the Modi government began fixing higher prices for ethanol produced from B-heavy molasses and whole sugarcane juice/syrup. The idea was to compensate mills for revenues foregone from reduced/nil production of sugar.

For the 2022-23 supply year, the ex-distillery price of ethanol payable by OMCs has been set at Rs 49.41/litre from C-heavy molasses, Rs 60.73/litre from B-heavy molasses, Rs 65.61/litre from sugarcane juice/syrup, Rs 55.54/litre from broken/damaged grains, Rs 56.35/litre from maize and Rs 58.50/litre from surplus FCI rice.

The stimulus that this has given to ethanol production can be seen from its all-India average blending with petrol touching 11.75% in 2022-23, as against 1.6% in 2013-14 (chart).

The incorporation of new feedstocks for ethanol production can create new demand for grains. Uttar Pradesh is a major sugarcane grower, just as Bihar is in maize. If their farmers were to supply rice, barley and millets as well to distilleries, these two states could well "fuel India" the way Punjab, Haryana or Madhya Pradesh "feed India".



The current year might be an exception, with likely pressure on domestic availability/stocks of cereals and sugar from El Niño-induced monsoon uncertainties. While the Modi government has already banned exports of wheat, sugar and non-parboiled non-basmati rice, it hasn't put any brakes so far on the ethanol blending programme.

Byproduct benefits

Distilleries are often synonymous with pollution. The liquid effluent (spent wash) generated during alcohol production can pose serious environmental problems, if discharged without proper treatment.

But the new molasses-based distilleries have MEE (multi effect evaporator) units, where the spent wash is concentrated to about 60% solids. The concentrated wash is used as a boiler fuel along with bagasse (the fibre remaining after crushing sugarcane) in 70:30 ratio. The resultant ash coming out from the incineration boiler in dry form contains up to 28% potash, which can be used as fertiliser.

The spent wash from grain distilleries similarly goes into a decanter centrifuge, which separates the liquid from the solid. This is followed by concentrating the liquid in MEE units and drying it along with the wet cake from the decanter. The resultant by-product, DDGS or distillers' dried grain with solubles, is sold as animal feed.

UNSAFE LANDINGS RISE AS INDIGO SEEKS TO TRIM SOARING FUEL COSTS

IndiGo's attempts to save about six kg of fuel per flight, by recommending soft landings using only three of an aircraft's wing flaps, may be leading to an increase in unsafe landings, according to its pilots.

On Friday, the Directorate General of Civil Aviation (DGCA) imposed a fine of ₹30 lakh on IndiGo for tail strikes during recent landings.

The airline's pilots claim that such unsafe landings are a direct result of IndiGo's "over-emphasis on reducing fuel usage".

Four tail strikes

Following four tail strike incidents on IndiGo's Airbus A321 aircraft within a span of six months this year, the regulator carried out a special audit of the airline and found "systemic deficiencies" in "operations, training and engineering procedures", according to a DGCA statement. Subsequently, the regulator served a showcause notice on the airline, to which IndiGo responded, insisting that no procedures had been violated. The regulator found its reply unsatisfactory. Apart from imposing the ₹30 lakh fine on the airline, the DGCA has also ordered it to amend its procedures in line with DGCA and Airbus guidelines.

Responding to The Hindu's query on the nature of deficiencies discovered, a senior DGCA official said, "As a company policy, the crew were asked to carry out flap 3 landing every time, which is not in line with the Airbus Flight Crew Operating Manual (FCOM) procedures."

A flap 3 landing, known as a soft landing, involves only three of the four flaps on the wing and produces less drag, as a result of which less fuel is burned than in a flap full landing, known as a hard landing.



But during a flap 3 landing, the aircraft's nose is pitched slightly higher than in flap full, while its tail is down, therefore increasing the chances of a tail strike.

The Airbus A321, which was involved in the recent unsafe landing incidents, is longer than the A320 aircraft that dominate IndiGo's fleet, which means that the risk of a tail strike is higher.

Pilots at IndiGo have been told that a flap 3 landing could save the airline six kg of fuel per landing. Though Airbus doesn't prohibit flap 3 landings, they can be trickier for runways at an elevation such as those in Mumbai (50 feet), Delhi (800 feet), Bengaluru (3,000 feet) where there is a possibility of aircraft unable to land within the touchdown zone or overshooting the runway.

Some of the airline's pilots who spoke to The Hindu on the condition of anonymity said they preferred not to carry out a flap 3 landing because of the risks involved.

Another pilot said the airline was keeping a strict vigil on how much fuel they each consumed on their flights. "There are meetings where we are shown a graph plotting fuel spent by different pilots. Though the individual data is anonymised, that can't be hard to extract," the pilot said.

Pilots also spoke at length about an "exponential increase" in duty timings and mounting fatigue.

IndiGo said it is examining the DGCA order and will respond in due time.

FLIGHT CANCELLED AFTER PILOT REFUSES TO TAKE OFF: WHY AIRLINES HAVE TO FOLLOW NORMS FOR DUTY HOURS

On Sunday night, around 100 passengers including three BJP MPs were stranded in Rajkot after their Air India flight to Delhi was cancelled. The pilot had refused to take off because the permitted duty hours of the crew were over, and operating the flight would have violated the flight duty time limitation (FDTL) norms laid down by India's aviation safety regulator.

Air India expressed regret, offered taxi rides to those who wanted to fly from Ahmedabad and hotel stays to those who preferred to fly the next day, and full refunds to passengers who wanted to cancel. But it said that FDTL rules were "non-negotiable and cannot be compromised due to flight safety reasons".

Instances of pilots refusing to fly due to fatigue or because they had completed regulation duty hours are not unusual. On July 2, an IndiGo pilot refused to operate a Lucknow-Chennai flight citing fatigue. In the last week of June, the pilot of a London-Delhi AI flight that was diverted to Jaipur due to bad weather refused to operate the Jaipur-Delhi leg citing FDTL norms.

The job of the flight crew is safety-critical and passenger safety is the top priority in aircraft operations. Crew fatigue and exhaustion are seen as major factors contributing to human errors that can lead to catastrophic accidents. Therefore, FDTL regulations are considered important globally. In India, FDTL compliance is overseen by the Directorate General of Civil Aviation (DGCA).

Airlines have a plan, but it sometimes fails

Unforeseen flight delays — for reasons such as bad weather, technical snags in aircraft, or congestion at airports — are usually the reason why FDTL norms come into the picture. Pilots and crew of an aircraft usually operate multiple flights in a day, and delays can quickly add up to eat into authorised duty hours.



Airlines usually have management and rostering systems that optimise crew efficiency and ensure crew changes at regular intervals to minimise chances of fatigue and violation of FDTL norms. There are provisions for standby crew, and some delays are factored into roster planning. When things do fall through the cracks, it is usually not due to the absence of proper planning.

India civil aviation, Safety limits to flying

It's the smaller airports that present the bigger headaches

Smaller airports are usually more susceptible to FDTL-related disruptions because they are unlikely to have standby crew, and it is difficult to mobilise them at short notice. Airlines base the bulk of operational staff in big cities with busy airports, where it is easier to have standby crews or mobilise them quickly. This is the reason Rajkot, Lucknow, or Jaipur present bigger challenges for airlines than say, Delhi or Mumbai.

As airlines expand their networks, they base pilots and other crew in more cities. But it would still be unviable and inefficient to have sizable crews in all cities of operation just to prevent any possible FDTL-related disruption.

Concern going forward: Looming pilot shortage

Given the volume of traffic, India does not see many FDTL-related disruptions. This could change in the coming years as Indian carriers expand their fleet and networks, and a steady supply of additional pilots is required. There could be pressure on the existing, slowly growing pool of pilots. In the worst case, airlines could face a major impediment to their growth plans even as demand surges.

Indian airlines, mainly IndiGo and the Tata Group carriers led by Air India, have almost 1,500 aircraft on order, which will be delivered over the next 10 years. For an idea of how many new pilots will be needed in this period, consider this: one standard narrow-body jet (of the Airbus A320/ Boeing 737 family) needs at least 12 pilots on average, while a wide-body aircraft needs 20-30 (captains plus first officers), depending on the range.

India is estimated to have around 9,000 pilots for a fleet of some 700 aircraft currently. Almost 2,000 additional pilots may be needed every year over the next few years to keep up with the expected pace of fleet expansion. This is more than double the number of commercial pilot licences that the DGCA currently issues annually.

Also, the most acute shortage is expected to be of the experienced pilots, or captains, who lead the crew and are in charge of the flight. It takes a few years for a pilot to be promoted to captain, and it is estimated that the existing Indian airline ecosystem produces fewer than 200 captains a year.

In March, AI cut the frequency of flights on some long-haul international routes due to the non-availability of the requisite number of pilots for wide-body planes. Over the past few months, the airline has stepped up the hiring of pilots and cabin crew.

**LIFE & SCIENCE****NEW CLUE TO FRBS, MYSTERIOUS RADIO FLASHES FROM SPACE**

Mysterious emissions of radio light from the far reaches of the universe are the next big thing in modern radio astronomy. Fleeting flurries of radio waves, called fast radio bursts (FRBs) reach Earth from faraway galaxies, emitting as much energy in a millisecond as the sun does over weeks.

In spite of being the brightest radio bursts found in nature, however, these will o' the wisps of the cosmos are so transient that astrophysicists have only been able to 'see' them momentarily using large radio telescopes. Ever since the first FRB was picked up by radio astronomers more than 15 years ago, they have identified hundreds, and the list is getting longer by the day.

What do we know about FRBs?

We know almost nothing about the precise origins of FRBs and why they appear in such short, sharp bursts – other than that these celestial electromagnetic impulses probably come from the embers of dying stars.

Some FRBs are 'one-off' phenomena: spotted just once and never detected again; others are repeaters, flashing Earth intermittently like some ghostly lighthouse in the depths of space.

An international team of astronomers has now published the results of its exhaustive study on a repeating FRB from a distant galaxy that offers new clues about the origins of these mysterious radio flashes. The report was published in the journal Science on May 12.

The astronomers tried to figure out what produces an FRB by studying its local environment to determine the sources that could exist in, or create, such environments.

They targeted a repeating FRB, called FRB 20190520B (they are christened by the date of their discovery, in this case: May 20, 2019), using the Green Bank Telescope in the U.S. and the Parkes Observatory in Australia, and recorded hundreds of bursts from it.

What did the astronomers find?

They discovered that the FRB's Faraday rotation measure – an indicator of its magnetic field strength – was highly variable and that it reversed direction twice. This magnetic reversal, they believe, has to do with the FRB source orbiting a binary star system where the companion star is probably a massive star or a black hole.

Why do radio telescopes matter?

Until the early 1930s, astronomers depended on the limited visible part of the electromagnetic spectrum to make observations, unaware of the enormous potential of the radio band lying at one end of the spectrum. Their long wavelengths allow radio waves to traverse intergalactic space without interruption, making them an ideal tool to identify radio emissions from faraway heat sources. Radio astronomers today are much better off with telescopes that can even localise FRBs with arc-second precision, so that observations in other wavelengths could hunt for the FRB's host galaxy.



A SPACE RACE IS UNDERWAY ON THE KOREAN PENINSULA

It's been an eventful year for the rival space programmes of Seoul and Pyongyang: on May 25, South Korea for the first time used an indigenous launch vehicle to place a mission-capable satellite in orbit, and a few days later, North Korea launched a new rocket design from a new facility.

These rockets are the result of decades of development. South Korea's Nuri launcher is its first entirely indigenous design, and Seoul has ambitions of placing military and civilian satellites in orbit.

The North has cycled through several dramatically different launchers, and its Chollima-1 booster appears more advanced than anything it has flown to date, although its maiden test in May ended in failure.

While the programmes lag behind those of their neighbouring Japan and China, both nations have linked rockets to national pride. North Korean leader Kim Jong Un has called space "a demonstration of the overall national power" and former South Korean President Moon Jae-in said the first launch of the Nuri rocket in 2021 heralded the approach of a "Korea Space Age".

The North's latest push suggests it is serious about deploying operational satellites. "The new phase of their program is clearly moving from an experimental 'get something into orbit' phase to a phase in which operational satellites will be in play," he said. "For now, low orbit recon satellites, but eventually I expect them to launch geostationary communications satellites too."

Both countries have poured resources into launch facilities.

South Korea's Naro Space Center, perched on cliffs overlooking the sea on southern Oenaro Island, opened in 2009 and has expanded in recent years.

North Korea built its first satellite launching facility at the eastern site of Tonghae in 1985. Sohae, on the west coast, was completed in 2011.

The Chollima-1 was launched from a new pad at Sohae built in just over a month, underscoring the political importance of the launch and the overall satellite programme, 38 North, a U.S.-based site that monitors North Korea, said in a June 7 report.

"The speed at which North Korea built the new coastal launch pad for the Chollima-1 at Sohae is astonishing," said Markus Schiller, a Europe-based missile expert. "This indicates they have the means to do that, and impressive resources at hand."

The next flight of South Korea's Nuri is expected in 2025. It plans to use the follow-on KSLV-III project as the mainstay of its spaceflight programme by 2030.

SCIENTISTS FIND WAY TO MAKE FLUOROCHEMICAL PRODUCTION MUCH SAFER

Scientists from the University of Oxford have come up with a new way to obtain fluorine atoms, used to manufacture important chemical compounds used in industry and research, in a much safer and less energy-intensive way. Members of the scientific community have hailed the finding as a major breakthrough that could transform the synthesis of these compounds.

The work was published in Science on July 20, 2023

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



Fluorine is a highly reactive element used to make fluorochemicals, which in turn are used to produce plastics, agrochemicals, lithium-ion batteries, and drugs. Fluorine comes from a calcium salt called calcium fluoride, or fluorspar. Fluorspar is mined and then treated with sulphuric acid at a high temperature to release hydrogen fluoride (HF). HF is then made to react with other compounds to create fluorochemicals.

A major downside of this process is that HF is an extremely poisonous and corrosive liquid that irritates the eyes and respiratory tract even at low concentrations. It also requires special transportation and storage. "Despite stringent safety regulations, HF spills have occurred numerous times in the last decades, sometimes with fatal accidents and detrimental environmental effects," a university press release said.

To avoid HF and to make the extraction process require less energy, the researchers took inspiration from how the human body makes bones and teeth: through calcium phosphate biomineralisation. They ground fluorspar in a ball-mill with potassium phosphate. While fluorine is very reactive, calcium atoms prefer phosphorus even more, so the milling created calcium phosphate and another compound with fluorine atoms. They called the latter Fluoromix. When Fluoromix was reacted with organic compounds, it could create around 50 fluorochemicals with up to 98% yield.

EXPLAINED: HOW THE US' TRINITY TEST LED TO THE DAWN OF THE ATOMIC AGE

At precisely 5.30 am on July 16, 1945, the world's first super bomb — loaded with about 13 pounds of plutonium at its core — exploded in a desert in New Mexico, destroying everything in its vicinity and melting vast swathes of sand into sea-green glass.

Minutes later, hundreds of US scientists and military personnel — who had taken cover at bunkers located around 10,000 yards away from the bomb — celebrated the dawn of the nuclear age. Before it detonated, the scientists had placed bets on what could happen. Some believed that the bomb would be a dud and would fail to explode. Others feared a far deadlier consequence — the end of the world.

The super bomb, nicknamed 'Gadget', was built by a team of scientists at a top-secret site in Los Alamos, New Mexico. It was developed as part of the US-led Manhattan Project, which sought to build nuclear weapons to give the allied forces an edge over Germany, Japan and Italy in World War 2.

On this day, exactly 75 years ago, the scientists tested Gadget — the world's first atomic bomb — in what was dubbed the 'Trinity Test'. Less than a month later, an identical nuclear bomb called 'Fat Man' was dropped on the Japanese city of Nagasaki, killing tens of thousands.

What was the Manhattan Project?

Merely a month after Germany initiated World War II by invading Poland, a letter signed by Nobel prize-winning physicist Albert Einstein warned then-US President Franklin D Roosevelt of the potential threat posed by an atomic weapon being developed by Adolf Hitler.

Soon after, the United States launched a secret atomic research undertaking, code-named the Manhattan Project, which sought to develop an atomic weapon to end the war. The project brought together some of the country's leading atomic experts as well as exiled scientists and physicists from Germany and other Nazi-occupied nations.



However, the Manhattan Project remained a relatively small-scale initiative for the next two years. It was only after the bombing of Pearl Harbour by the Japanese Navy Air Service in 1941, when President Roosevelt declared that the US would enter the Second World War, that the project was officially kicked into gear.

US Army Colonel Leslie R Groves was appointed to lead the project. By December, 1942 facilities were established in remote locations across the US, as well as in Canada. However, the super bomb was finally designed and conceptualised by a team of scientists at a top-secret laboratory in Los Alamos.

The team at Los Alamos was headed by J Robert Oppenheimer, a physics professor at the University of California, Berkeley. Oppenheimer later came to be known as the “father of the atomic bomb”. His team included Danish scientist Niels Bohr, Italian scientists Enrico Fermi and Emilio Segré, Hungarians Edward Teller and John von Neumann, Hans A. Bethe from Germany, as well as American-born scientist Richard Feynman.

The Los Alamos team developed two types of bombs — one was uranium based, which was later code-named ‘the Little Boy’ before it was dropped on Hiroshima; the other had a plutonium core. Testing the ‘Little Boy’ was not feasible, as there was not enough uranium available. The Plutonium bomb was eventually tested at the Trinity site on July 16, 1945.

What happened during the Trinity Test?

A few days prior to the test, parts of the dismantled super bomb were carried to the Alamogordo Bombing Range, which was located around 337 km away from Los Alamos. An army sedan first brought the bomb’s plutonium core to the site on July 12. The next day, Gadget’s non-nuclear components were brought to the range. By July 15, the bomb was assembled and placed on top of a 100-foot firing tower.

In the evening, the team of scientists and military personnel arrived at the test site, where it was pouring rain. The scientists feared that they would not be able to carry out the test at 4 am, the next morning, as planned. As tensions rose, the scientists began placing their bets, a report by the US’ Office of Scientific and Technical Information (OSTI) claimed. Oppenheimer bet ten dollars that the bomb would not work.

The test was eventually rescheduled to 5.30 am. Early the next morning, the skies cleared just in time for the test. The Los Alamos team retreated and took cover at bunkers, located about 10,000 yards away from the bomb in all four directions. The scientists ensured that they were all located in different bunkers, in case of an accident. If tragedy struck, they wanted to make sure that someone was left behind to further the research.

At exactly 5.30 am, the bomb went off leaving a mammoth mushroom of smoke and gas in its wake. The firing tower, much like everything else in the area, was destroyed completely. The device exploded with a power equivalent to 21,000 tons of TNT, the New York Times reported.

In an interview with NBC in 1965, Oppenheimer said that a line from the Bhagavad Gita occurred to him at the time of the explosion — “Now I am become death, the destroyer of worlds.”

After celebrating the success of the test, Colonel Leslie Groves and Oppenheimer began drafting their report to submit to the Secretary of War and the US President.



What were the repercussions of the Trinity Test?

New Mexico residents were pointedly not warned before the test, to ensure that it was carried out secretly. Data collected by the New Mexico health department, which showed the adverse impact of radiation caused by the detonation, was ignored for years after the test.

A sudden rise in infant mortality was reported in the months after the explosion, according to a study published by the Centers for Disease Control and Prevention. Several residents also complained that the number of cancer patients went up after the Trinity Test.

It was only in 1990, when the federal government passed the Radiation Exposure Compensation Act (RECA), that residents of North Mexico who contracted Cancer and other other illnesses due to radiation exposure received compensation.

The dust outfall from the explosion was expected to have travelled nearly 100 miles from the test site, posing a serious threat to residents in the area. Many families complained that their livestock suffered skin burns, bleeding and loss of hair.

There is more data available on the damage done by the atomic bombs in Japan. The Hiroshima and Nagasaki bombings are known to have killed well over 200,000 people — many of whom succumbed to radiation poisoning in the weeks after the blasts.

The uranium bomb in Hiroshima on August 6, 1945, destroyed around 70 per cent of all buildings and caused around 140,000 deaths by the end of 1945. The plutonium bomb explosion over Nagasaki, which took place three days later, killed 74,000 people that year, according to International Campaign to Abolish Nuclear Weapons (ICANW) data.

After seeing the destruction caused to the two Japanese cities, Oppenheimer publicly admitted that he regretted building a bomb that could cause an apocalypse. “Mr. President, I feel I have blood on my hands,” he famously told US President Harry Truman later that year.

How many countries worldwide now have nuclear weapons?

Seventy-five years after the Trinity Test, as many as nine countries around the world are currently in possession of nuclear weapons. These include, the US, the UK, Russia, France, India, China, Israel, Pakistan and North Korea.

At least eight countries have detonated over 2,000 nuclear test explosions since 1945, according to data released by armscontrol.org.

The most recent instance of nuclear bomb test explosions conducted by India, were the series of five explosions done as part of the Pokhran-II tests in May 1998. The first test, code-named Smiling Buddha, took place in May 1974.

IN AI'S UNLIMITED POTENTIAL, THE BENEFITS AND THE RISKS

On July 28, 2022, Google's DeepMind released the structure of 200 million proteins, literally everything that exists. This is said to be the most important achievement of AI ever, namely a 'solution' to the protein-folding problem.

Proteins are composed of a linear chain of amino acids and their 3D structures determine their functions. Structure determination is laborious. One way to know the optimal folded structure of



the protein computationally is to sample all its possible configurations, composed of specific angles between peptide bonds.

However, this is an impossible task as a typical protein may have about 10,300 configurations and even if a million of them were examined per second, the overall time needed will be unimaginable. That helped save about 1,000 million man-years.

DeepMind's AlphaFold made an important breakthrough in 2020. It accurately predicted the structures of about 100 proteins to atomic resolution, and no other solution came close to this feat. Many believe that the protein-folding problem is over.

Besides publishing the work in Nature, DeepMind also decided to place the research outcomes — source code, structures of unknown proteins — easily accessible so more discoveries can happen. Already, this has assisted the Drugs for Neglected Diseases initiative (DNDi) in addressing deadly Chagas disease and Leishmaniasis. Since drug discovery has become faster due to AlphaFold, new drugs for rare diseases, which are of little commercial interest to pharma companies, have become possible.

Other benefits

In 2020, a robotic synthesiser read a research paper and made the compound described in it. With giant advances in computational science and 3D protein structures, discovery labs will shrink to 'AI synthesizers'. Thousands of molecules or processes may be screened for specific functions rapidly. Robots will characterise them to 'discover' an optimised strategy, directed by non-human 'agents'. This could change chemistry.

The UNEP's World Environment Situation Room (WESR) collects and analyses, using AI, real-time sensor data from thousands of sensors spread over 140 countries to predict carbon dioxide concentration, glacier mass, sea level rise, biodiversity loss, etc. Ultimately, we understand the health of the planet from a holistic perspective.

Large Language Models that built the likes of ChatGPT can create excellent text, music, and art. But they are not yet good at writing complicated chemical equations or new mathematical formulae to explain phenomena. When AI will eventually get there, when creativity is not exclusive to humans, the age of machines will appear.

New risks

For the scientific enterprise, in the era of 'discoveries' by 'agents' made of silicon, authorship may become meaningless. Those owning 'agents' may own knowledge.

Scientists warn that AI products must be used with caution. Tools such as ChatGPT can assist in literature search but cannot provide deep analysis and may miss profound insights central to articles.

Intrinsic biases of scientific enterprise can under-represent minority views and could lose original thoughts, due to poor citations. Some journals have suggested authors to declare the use of AI tools in publications and have discouraged ChatGPT from being an author, with exceptions.

As compiling information and presenting them coherently by AI is easy, new paper factories may proliferate. Thankfully, such text can be identified by a new tool. AI-modified figures and images can produce a conundrum of 'data', making a nightmare for publishers.



However, AI can be an excellent aid in helping authors in better visualisation, effective communication and compiling known facts, if used judiciously.

AI helps in the democratisation of knowledge. But 'knowledge-to-things' transformation will need infrastructure and resources. Advanced medicine and cutting-edge science are unlikely to develop in resource-limited settings. This is known historically, but there is a significant difference now.

The AI-Chasm

Infrastructure enabling advanced science is increasingly sophisticated and the gap between the haves and have-nots is widening dramatically. Clearly, proliferation of AI could concentrate wealth, breeding inequality.

The 'AI being' can write music, poems, and manuscripts faster, and possibly, even better. This could create polymath 'beings'. It could radically transform workplaces and institutions. How would one evaluate productivity in the AI era? What could be the measure of excellence for individuals and institutions? The AI-divide will be far deeper than the digital-divide.

Act quickly

Governments at all levels must urgently assess the impact of AI on societies. They must form advisory groups and come up with AI and data-governance policy guidelines to direct institutions, industry, and society. Similar efforts must happen in each institution. An interdisciplinary environment is needed for responsible AI development. Surely, early movers will have a greater advantage.

TELLING TIME WITH GEOLOGY

Our planet is more than four billion years old – a staggering amount of time for humans to contemplate. To ease this task, experts have divided earth's history into pieces of time, called aeons, eras, periods, and epochs.

These divisions in earth's geological timescale demarcate key geologic events and the appearance (or disappearance) of notable forms of life. It all began with the creation of the earth's crust and continued with the appearance of plants, birds and animals, their ceaseless evolution making a mark in some way on their time.

Broadly, there are four geological eras. The Precambrian Era began 4.6 billion years ago, with the formation of our planet and the emergence of the first life forms.

The Palaeozoic Era lasted from 541 million to 252 million years ago, and was characterised by the evolution of complex life, including fish, plants, insects, and amphibians.

The Mesozoic Era came next, lasting from 252 million years until 66 million years ago. This was the age of dinosaurs, together with the first appearance of birds and flowering plants towards the denouement. Finally came the Cenozoic Era, which began 66 million years ago and continues to this day, distinguished by the rise of modern animals.

Today, scientists around the world are locked in a debate about whether we are currently in a new geological time period, dubbed the "Anthropocene", marked by the oft-devastating effects of human presence on earth.



THE HEAT IS ON

Wildfires and scorching heat battered Europe and other parts of the world over the week. At 52.2 degrees Celsius, a village in China's Xinjiang region recorded the hottest mid-July in the country's history. The previous record was 50.6 degrees Celsius set in 2017. In the U.S., Death Valley, where the hottest temperature on earth was recorded at 56.7 degrees Celsius in 1913, became a marker for the rest of the country. Furnace Creek in the area saw the mercury touch 53.3 degrees Celsius on July 16. Tourists flocked for a photo with the digital thermometer at the location, turning an occasion portending climate catastrophe into a festive affair.

Various parts of Europe sizzled in one of the most intense summers on the continent. Greece is battling wildfires at a region near Athens, and officials have employed water bombers to aid in the effort. However, strong winds are hampering the fight. A summer camp with more than 1,200 children had to be evacuated. The Acropolis, one of Greece's top tourist destinations, had to be partially shut owing to heatwaves.

Italy and Spain bore the brunt of the heat. Tuesday became Rome's hottest day on record, witnessing 41.8 degrees Celsius. Zoo animals were fed frozen food and fruit popsicles. More than 4,000 people had to be evacuated after a fire tore through Spain's La Palma and burned down 3,500 hectares of land.

July 3 was the hottest day ever recorded globally, show data from the U.S. National Centers for Environmental Prediction. The average global temperature reached 17.01 degrees Celsius on that day, surpassing the August 2016 record of 16.92 degrees Celsius as heatwaves sizzled around the world.

GENOMIC DATA THROW LIGHT ON DEMISE OF COPPER AGE

An analysis of ancient human genomic data suggests that Copper Age farmers and steppe pastoralists may have interacted 1,000 years earlier than previously thought. The findings, published in Nature, may aid our understanding of the demise of the Copper Age and the expansion of pastoralist groups around 3,300 BC.

Previous analyses of ancient genomic data have suggested that two major genetic turnover events occurred in Western Eurasia; one associated with the spread of farming around 7,000-6,000 BC and a second resulting from the expansion of pastoralist groups from the Eurasian steppe starting around 3,300 BC. The period between these two events, the Copper Age, was characterized by a new economy based on metallurgy, wheel and wagon transportation, and horse domestication. But what happened between the demise of Copper Age settlements (around 4,250 BC) and the expansion of pastoralists is not well understood.

According to the paper, the researchers analysed genetic data from 135 ancient individuals, dating to between 5,400 and 2,400 BC, from eight sites across southeastern Europe and the northwestern Black Sea region. While there was genetic continuity between the Neolithic and Copper Age groups, from around 4500 BC groups from the northwestern Black Sea region carried varying amounts of ancestry from Copper Age and steppe-zone populations, the authors write.

They suggest that this finding shows that the groups had cultural contact and mixed nearly 1,000 years earlier. The transfer of technology between farmers and transitional hunters from different



geographical zones was integral to the rise, formation and expansion of pastoralist groups around 3300 BC, the authors propose.

“A finding from our study indicates early contact and admixture between Copper Age farming groups from southeastern Europe and Eneolithic groups from the steppe zone in today’s southern Ukraine, possibly starting in the 5,500 BC when settlement densities shifted further north,” they write.

The early admixture during the Eneolithic appears to be local to the NW Black Sea region of the fourth millennium BC and did not affect the hinterland in southeastern Europe. “The Early Bronze Age individuals from Yunatsite and Pietrele do not show traces of steppe-like ancestry but instead a resurgence of hunter-gatherers ancestry observed widely in Europe during the fourth millennium BC,” they write.

SELF-HEALING

Scientists for the first time have witnessed pieces of metal crack, then fuse back together without any human intervention, overturning fundamental scientific theories in the process. If the newly discovered phenomenon can be harnessed, it could usher in an engineering revolution — one in which self-healing engines, bridges and airplanes could reverse damage caused by wear and tear, making them safer and longer-lasting. Fatigue damage is one form in which machines wear out and eventually break. Repeated stress or motion causes microscopic cracks to form. These cracks grow and spread until they snap, and the whole device fails. The researchers evaluated how cracks formed and spread through a nanoscale piece of platinum. They found that about 40 minutes into the experiment, the damage reversed course. One end of the crack fused back together as if it was retracing its steps, leaving no trace of the former injury. Over time, the crack regrew along a different direction, the release says.

MAKING MEAT IN THE LAB

We have had two recent reports in the Indian press about making meat in the lab: one in The Statesman on June 28, 2023 and the second one in The Hindu of July 9, 2023. They both focussed on the Indian efforts in making meat in the laboratory, rather than killing animals in the farm or in specially constructed slaughter houses.

In fact, the making of meat in the laboratory has been going on both in the U.S. and Europe. The idea is not to kill the animal for flesh, but to save it and grow its meat in the laboratory.

As the article in The Statesman points out, there are several reasons why lab-cultured meat is a better option: there is zero cruelty; lab meat can be made with much less fat, no cholesterol and no saturated fats, thus healthier for the consumer; once the lab meat is available in the future, it may become cheaper than conventional meat and; lab meat will have less environmental impact.

The last point is particularly important, since it is estimated that there are more than 50 billion chickens raised for meat in the world each year. That works out to about 136 million chickens killed each day worldwide.

The U.S. is the third most prolific country for chicken farming. The site Rooster Haus Rescue points out that 23.3 million land animals are killed in the U.S. alone every single day. Similar numbers exist for pork and beef. All this also adds about 15% of greenhouse gas emissions, affecting the environment as well.



It is against this background that making meat in the laboratory is a cleaner and better option. In 2017, the Dutch scientist Dr. Mark Post created beef in his laboratory. We have progressed remarkably since then in the field of culturing meat in the lab, which is both animal and environment-friendly.

In fact, the U.S. Agriculture Department has given clearance to several private firms that grow meat from animal cells in the lab. The group called PETA (People for the Ethical Treatment of Animals) in the U.S. has granted funds to two firms (Upside Foods, and Good Meat) which make meat in the lab, rather than by slaughtering animals.

In India, the Department of Biotechnology (DBT) offered a grant to the Centre for Cellular and Molecular Biology, Hyderabad for culturing meat in the lab from animal cells, and Doctors Jyotsna Dhawan and Madhusudana Rao, did so successfully. Currently, there are a few private labs in India that produce cultured meat.

How is cultured meat produced? The firm Good Meat in the U.S. uses stem cells made from muscle and other organs of a living animal, placing these cells in petri dishes with amino acids and carbohydrates to help these cells multiply and grow. The cells are grown in steel tanks and produced. The product is then shaped like cutlets and sausages and sold in the market.

Cultured meat firms in India do likewise.

WHAT HAS TO BE DONE TO GET TO ZERO HUNGER?

The story so far:

The Global Report on the Food Crises (GRFC) 2023 released recently estimated that between 691 million and 783 million people in the world suffered from hunger in 2022. While the two pandemic years did not record a growth in food insecurity, the data for 2022 shows levels far higher than pre-pandemic 2019. This year's report records the historic moments that had an impact on the assessment — a pandemic and ensuing economic crisis, a war (in Ukraine), soaring prices of food, and agricultural inputs. The GRFC is produced by the Food Security Information Network in support of the Global Network against Food Crises, and involves 16 partners to achieve a joint consensus-based assessment of acute food insecurity in countries.

What is food security?

Food security is defined (from the World Food Summit of 1996) thus: "When all people, at all times, have physical and economic access to sufficient, safe and nutritious food that meets their dietary needs and food preferences for an active, and healthy life". The prevalence of moderate or severe food insecurity in the population is based on the Food Insecurity Experience Scale (FIES).

What are the key findings?

The Global Report starts with a qualified assertion that hunger is no longer on an alarming path upwards at the global level, but still far above pre-COVID pandemic levels, and that the world is far off track towards achieving Sustainable Development Goal 2 — Zero Hunger. It sets the global contexts preceding and during the year under assessment, particularly paying attention to the increasing phenomenon of urbanisation, and its effects on food security.

New estimates of FIES, as per the report, "confirm that for 2022, no progress was made on food insecurity at the global level. Following a sharp increase from 2019 to 2020, the global prevalence



of moderate or severe food insecurity remained unchanged for the second year in a row, but remained far above pre-COVID-19-pandemic levels.” In 2022, an estimated 2.4 billion people did not have access to adequate food. This is still 391 million more people than in 2019. Global hunger, measured by yet another metric — the prevalence of undernourishment — remained relatively unchanged from 2021 to 2022 but is, again, far above pre-COVID-19-pandemic levels, affecting around 9.2% of the world population in 2022 compared with 7.9% in 2019, according to the report.

Some good news is that stunting, another key metric, defined as the condition of being too short for one’s age, among children under five years of age has declined steadily, from 204.2 million in 2000 to 148.1 million in 2022. Simultaneously, child wasting, caused by insufficient nutrient intake or absorption, declined from 54.1 million in 2000 to 45 million in 2022. In terms of children who are overweight or obese, the study indicated a non-significant increase from 5.3% (33 million) in 2000 to 5.6 % (37 million) in 2022.

The revised analysis presented in this year’s report shows that almost 3.2 billion people worldwide could not afford a healthy diet in 2020, with a slight improvement in 2021. The cost of a healthy diet increased globally by 6.7% between 2019 and 2021. It also projects that almost 600 million people will be chronically undernourished in 2030.

What are the key drivers of food insecurity?

The report notes the following reasons as being responsible: slowing down, thanks to lockdowns, economic downturns, and other pandemic-related disruptions in 2020 that led to job losses and reduced incomes for many people; the Ukraine war; governmental policies that may not be entirely favourable; and increasing urbanisation that drives changes through the agrifood systems. The report’s comparison of food insecurity among rural, peri-urban and urban populations reveals that global food insecurity is lower in urban areas.

What are the solutions ahead?

The report helps “identify vulnerable population groups, contributing to evidence to inform decision-making and effective action through the appropriate targeting and design of policies and programmes.” As the authors record, sound nutrition is fundamental to the achievement of the Sustainable Development Goals and must be central in government policy and supported by civil society and the private sector. Some of its recommendations include supporting healthier food outlets as key for enabling access to healthy diets. Policy incentives are necessary to encourage shops to sell greater amounts of fresh and minimally processed foods. Another key input is on street foods, which an estimated 2.5 billion people worldwide consume every day, thanks to the convenience and cost factor. The report calls for addressing multiple infrastructure and regulatory gaps to improve nutritional safety and quality of street food.

The GRFC also suggests building rural infrastructure, including quality rural and feeder roads to connect remote farms and enterprises to main road networks. Other public investments to support linkages between (mainly small) farms and small and medium enterprises could include warehousing, cold storage, dependable electrification, access to digital tools and water supply.

It underlines several times the role of local governments as fundamental actors in leveraging multilevel and multi-stakeholder mechanisms that have proved effective in implementing essential policies for making healthy diets available and affordable for all.



IS MORINGA THE NUTRITION POWERHOUSE TO CONTROL BLOOD SUGAR? WHAT'S THE BEST WAY TO HAVE IT?

Let me state at the very outset that several dietary interventions with plant foods may just be one of the many corrective steps for people living with diabetes. This can in no way mean you can take short cuts with your prescribed routine of exercises, medication and lifestyle adjustments for weight loss. Of course, several plant foods contain natural compounds and nutrients that promote blood sugar control. Among them moringa leaves, also called drumstick leaves, have, in animal experiments, been effective in lowering blood sugar in prediabetes and Type 2 diabetes. While human trials are needed, let's look at why this works for both diabetes and other health conditions.

MORINGA AND BLOOD SUGAR

Moringa is believed to increase insulin production, sensitivity and glucose uptake by the muscle and liver and reduce the amount of glucose the small intestines absorb.

It is a myth that moringa is a plant insulin. Know that insulin cannot be produced by plants, it can only be produced in animals and humans. So far, there has been no study to show the gene sequence of insulin being replicated in any plant derivatives. So how does moringa help in controlling blood sugar? That's because it contains isothiocyanates, which help in delaying the onset of diabetes, as evidenced in mice experiments. In fact, a 2019 review in PubMed had found that a protein isolate obtained from moringa leaves and administered at 300 and 500 mg/kg was able to induce a significant hypoglycemic reaction in diabetic mice, although, after heating the protein isolate at 98 °C, the effect was abolished. That's the reason that overcooking moringa leaves is not advisable. That way you also lose its fibre content, which again keeps you full longer, delays digestion and controls blood sugar spikes immediately after a meal. Of course, drumsticks are good in fibre. So have the leaves and stalk together. Also sprinkle the leaves in your meals, even soups for that matter.

Many plants have insulin-like proteins and compounds that mirror their functions and processes but cannot be equated with insulin. Soyabean leaf extracts have something called glycine max, which studies have shown play a role in improving blood glucose, insulin resistance, adiposity and dyslipidemia in prediabetes subjects consuming their habitual diet. Corn has amylase, high concentrations of which help in managing blood sugar levels. In short, these work through different mechanisms rather than the insulin pathway. Peptides have similarity to insulin itself.

Moringa leaves contain antioxidants like quercetin and chlorogenic acid, both of which stabilize glucose levels in the bloodstream and sugar and protein levels in urine.

NUTRITIONAL BENEFITS OF MORINGA LEAVES

Fortunately, in India, all parts of the moringa tree, stalk, leaves and pods have been traditionally used for their medicinal properties. One cup of leaves, which is about 20 grams, contains protein, vitamins A, B, C and E, minerals, including folates, potassium, calcium, iron, and magnesium. The human body absorbs folates from moringa leaves more easily than those from other folate-rich foods such as legumes and green leafy vegetables. Studies have shown that they have a role in improving fasting blood glucose levels and in staving off anaemia. Moringa leaves are rich in antioxidants, remove free radicals, reduce oxidative stress and inflammation, all of which trigger diabetes, heart disease and cancer.



Moringa leaves are also good sources of dietary fibre, omega-3 and omega-6 fats, beta-carotene, and many other antioxidant compounds, including flavonoids, phenolic acids, glucosinolates and carotenoids.

GO FOR THE REAL THING, NOT SUPPLEMENTS

Given these benefits, I would hasten to add that have moringa like a green leafy vegetable and make it a part of your daily curries rather than go for the shop shelf variety of powders and concentrates. The problem with the bottled variety is that we aren't sure of the uniformity of codes in commercially manufactured produce or the nutrient concentrations that are needed by the body. So go for the real deal, considering moringa is native to our country. Certainly, do not look at moringa as a treatment for diabetes but as a food that prevents disease progression.

WHAT DO HUMAN STUDIES SAY?

There are very few human studies and that too with limited sample sizes to draw generalised conclusions.

A study in 2014 investigated the effects of 7g of moringa leaf powder on blood glucose levels in menopausal women between ages 45 and 60 years, who began with a fasting blood glucose level at 106.7 mg/dl and after three months of daily consumption, could bring it down to 91.5mg/dL.

A team of scientists in Algeria investigated the effects of adding 20g of moringa powder to a traditional meal of boiled rice and camel meat on blood sugar in individuals with type 2 diabetes. The study just had 27 participants. The meal with moringa significantly reduced the average blood glucose rise compared to the meal without moringa. But the amount of moringa made their meals unpalatable.

A Spanish study involving 65 participants in 2022 investigated the effects of moringa capsules, providing 2.4 g of moringa leaf powder, on blood sugar levels in individuals with prediabetes. Participants receiving moringa had lower fasting blood glucose and glycated haemoglobin (HbA1c) than those receiving the placebo.

While these small studies indicate positive developments, a randomised controlled study in Thailand found that 4 gm of moringa daily for 28 days did not reduce blood sugar levels in individuals with Type 2 diabetes. So we can say while moringa leaves have blood sugar regulating capacity, one needs to demonstrate their efficacy among larger groups of people over a long period of time.

A MUTED CHEER

A new drug prescribed for Alzheimer's patients, donanemab, has generated considerable interest on whether a 'breakthrough' in treating the disease, the most common form of dementia, is in sight. Unfortunately, there is only very little to cheer.

On the July 17, donanemab's American manufacturer Eli Lilly published results of a trial on 1,736 persons in the Journal of the American Medical Association (JAMA). The drug was far from promising a cure but among those in the earliest stages of the disease, it significantly slowed cognitive decline in 47% of those who took the drug, as opposed to 29% of those who were administered a placebo. Some 860 people received the drug, every four weeks for 72 weeks and 876 did not.



Damage to brain cells

Donanemab is a monoclonal antibody, meaning they are lab-synthesised to mimic antibodies, which our immune systems produce to fight antigens, or harmful, invasive agents. The philosophy underlying the use of donanemab is that it can be used to neutralise the build-up of amyloid protein, believed to be most significantly associated with the disease. Elevated levels of amyloid trigger another protein called tau that damages brain cells, and causes the cognitive decline typified by the disease.

Two other drugs, aducanumab and lecanemab — also monoclonal antibodies and premised on the amyloid-tau hypothesis — were in recent weeks also reported to have reduced amyloid concentrations. However, an analysis of trial results showed that its effects at reducing cognitive decline were vague. Two aducanumab trials showed minimal benefit and a follow-up after six months revealed a 22% slower cognitive decline in those on the drug compared to placebo. A lecanemab trial in 1,800 patients with early onset Alzheimer's over 18 months reported similar results — a 26% slower cognitive decline. In effect, this means a “six-month benefit”, according to researchers Yen Ying Lim and Emily Rosenich, of the Monash University, Australia, in an article for The Conversation.

In the case of donanemab, those with low or moderate levels of tau declined 35% slower over 76 weeks than those on a placebo. However those with high tau levels declined at a similar rate regardless of donanemab or placebo. “The drug also cleared around 90% of the total amount of amyloid from the brain. Once people had minimal amyloid levels, the investigators switched them to a placebo. In the year after the switch, those who had taken donanemab continued to decline at a slower rate than those who had initially received a placebo,” says a report on the outcomes of the trial in the science journal Nature.

Cognitive decline

The degree of cognitive decline was assessed in patients by evaluating their ability to drive, pay bills and attend to affairs outside of their homes at various intervals ranging up to 18 months. Ultimately, both groups — treatment and the placebo — declined overall. The drug failed to benefit those with any more than mild systems and similar to aducanumab and lecanemab, the patients managed to stave off cognitive decline for 5-6 months.

There were a further set of complications associated with donanemab in the trial. Donanemab, like lecanemab and the related drug aducanumab, could cause amyloid-related imaging abnormalities (ARIA), a class of conditions that could lead to potentially fatal brain bleeding and seizures. Nearly a fourth of the participants in Eli Lilly's phase III trial developed ARIA, and three died of the condition. ARIA was most common among study participants who carry the APOE4 genetic variation, which raises the risk of developing Alzheimer's, according to the report in Nature.

While donanemab has already been approved by the U.S. Food and Drug Administration, it is expected to be fairly expensive at an estimated \$26,500 — putting out of reach of a large fraction of those afflicted unless there are significant government subsidies in place. While it may be early to be hopeful about reigning in Alzheimer's disease, donanemab and other drugs of its class only underline what has been known about the disease over a quarter century — early diagnosis offers the best chance yet to manage the disease.



India is expected to have about 7.6 million afflicted by 2030, as per the Dementia in India Report, 2020, majority of whom are likely to be diagnosed with Alzheimer's.

GENEVA HIV PATIENT CURED? CAN STEM CELL TRANSPLANT HELP?

The Geneva patient had been living with HIV since the 1990s and underwent a stem cell transplant in 2018 for an aggressive form of leukaemia. One month after the transplant, his doctors found that there was a significant reduction in the number of HIV-infected cells. Seeing this, the doctors tapered off his medicines and completely stopped them in November 2021. Twenty months later, his tests did not find any viral particles, latent reservoirs of the infection, or elevated immune response against the virus, according to Institut Pasteur, which is examining the case along with Institut Cochin and the IciStem consortium.

Unlike the five previous cases of remission, however, the Geneva patient's cells continue to be susceptible to HIV. This is the reason the researchers cannot rule out the possibility of his HIV returning. "Through this unique situation, we are exploring new avenues in the hope that HIV remission or even cure will one day no longer be a one-off occurrence," said Alexandra Calmy, HIV/AIDS Unit Director at the Geneva University Hospitals in a release.

What is the genetic mutation that was selected for the other patients in HIV remission?

All the six patients who have achieved HIV remission so far needed the stem cell transplantation for treatment of their cancers. In the first five cases, however, the treatment teams specifically looked for donors with CCR5 delta 32 mutation that is associated with lower risk of HIV.

HIV lowers immunity in infected individuals by attacking the CD4 immune cells. However, to gain entry into these cells, it needs receptors on the surface. People who inherit the CCR5 delta 32 mutation from both sets of parents do not form these receptors, essentially locking the virus out of the cells. Those who inherit the mutation from one of the parents have fewer receptors and are less likely to get the infection.

Only 1 per cent of the people in the world carry two copies of the CCR5-delta 32 mutation – meaning they got it from both their parents — and another 20 per cent carry one copy of the mutation, mainly those of European descent.

Can stem cell transplant become routine treatment for HIV?

It is highly unlikely. There are 38.4 million people living with HIV currently and it would be impossible to find a matching donor for all of them. In addition, the CCR5 delta 32 mutation mainly occurs in Caucasians, meaning it would not be possible to find donors for patients from high-burden countries, mainly in Africa. Besides, stem cell transplantation is a major procedure and comes with its own risks, including the risk of the patient rejecting the donor cells. Even with the transplants, the virus may learn to infect cells through other mechanisms.

Instead, treatment of HIV across the world depends on effective antiretroviral therapy. These cocktails suppress the replication of the virus within the body, allowing the number of CD4 immune cells to bounce back. It also reduces the viral particles to undetectable levels, meaning the person can no longer transmit the infection to others.

However, the anti-retroviral therapy needs to be taken for life. It doesn't remove the virus completely from the body, meaning the viral count goes up again whenever therapy is stopped.



The drugs also prevent the progression to the Acquired Immunodeficiency Syndrome (AIDS) stage.

Who are the patients who have become HIV-free so far?

Timothy Ray Brown, initially referred to as the Berlin patient, became the first person to overcome HIV after two stem cell transplants in 2007 and 2008. He remained HIV free till his death due to cancer in 2020.

Researchers finally replicated the success seen with the Berlin patient in 2019 when the London patient Adam Castillejo was announced to be virus-free. Two cases of ‘The City of Hope patient’ and ‘New York patient’ were reported in 2022.

The New York patient became the first mixed-race individual to be free of HIV after stem cell transplantation with CCR5 delta 32 mutation. The transplant was done using a dual stem cell therapy – using stem cells from umbilical cord of a neonate, complemented with stem cells from an adult – that requires less restrictive HLA matching. This may make such transplants possible in people from other races as well.

The results of the Dusseldorf patient were announced earlier this year. A 53-year-old man from Germany remained free of the virus four years after stopping antiretroviral therapy.

A CUSTOMISED MENOPAUSE PACKAGE

“Indian women generally get their menopause at 47, on average. However, there are some women who get their menopause by 55. Those who get it early lose the protective power of oestrogen earlier, which shields women against heart attacks. Other than cardiovascular diseases, menopausal women experience osteoporosis and urinary incontinence,” says Dr Malik. Women get busy ticking the boxes on symptoms — hot flashes, sweating, heart discomfort, flutters and arrhythmia, sleep difficulties, mood swings, anxiety, fatigue, sexual health issues, urinary bladder problems, vaginal dryness and joint and muscular discomfort.

“We are currently working on sarcopenia and cognitive decline during menopause and post-menopausal bleeding. We are still trying to understand how menopause is the biggest reason behind a number of health issues,” she says.

“Changes in the body like sagging breasts and chin hair threaten their sense of femininity. These are also the years when most women go through the empty nest syndrome as their children leave home for higher education or jobs. So this is the time when women need their families the most,” Dr Malik says. “Estrogen receptors are all over the body and that’s why a woman goes through a spectrum of health conditions they cannot make sense of,” she adds.

What happens if menopause is prolonged in some women and doesn’t happen by 55? “This certainly doesn’t mean that a woman has high fertility. It means that the transition period between a woman’s normal reproductive age and menopausal age, what we call perimenopause, is lengthened. Sometimes this transitional stage can extend to about four years. If menopause doesn’t happen by 55, then women should undergo certain tests like ultrasound, to check the thickness of uterine lining,” says Dr Malik.

Is a surgical menopause required in such cases? “That happens only when the inner lining of the uterus thickens or there are fibroids. We do a biopsy, a microscopic examination of that lining. If



we find the cells to have an increased risk of malignancy, then we advise the patient to surgically remove the uterus,” she adds. Even though women with late onset menopause are at a higher risk for breast, uterine and ovarian cancers, studies show that they also have a lower risk of heart disease, stroke and may have a longer lifespan.

HOW SHOULD CHRONIC HEART DISEASES BE MANAGED? HERE’S WHAT THE AMERICAN HEART ASSOCIATION’S REVISED GUIDELINES SAY

The American Heart Association (AHA) and the American College of Cardiology (ACC) revised its almost decade-old guidelines for treating chronic heart conditions such as chronic chest pain, those who have had heart attacks or surgeries to open blockages in the heart vessels, or those who are living with narrowing vessels in the heart because of fatty depositions.

The guidelines suggest fewer tests and surgeries and wider use of some of the newer diabetes medicines. Importantly, it strongly suggests a healthy diet, regular exercise, and other lifestyle changes as the cornerstone of heart health.

No need to go fishing for blockages

The guidelines say that there is no need for tests such as treadmill tests or CT Angiography in those people who have not seen a recent change in symptoms or capacity. Even then, it suggests first attempting to correct it with the usual lifestyle changes and therapies.

“It reiterates what most cardiologists already believe. There is no need for these tests routinely in everyone. However, many get it done as part of healthcare packages,” said Dr Justin Paul, director of the Institute of Cardiology at Madras Medical College.

He added, “People should focus on adopting a healthy lifestyle and modifying risk factors rather than going fishing for blockages to fix.”

Agreeing, Dr VK Bahl, principal director of cardiac sciences at Max Hospitals and former head of the department of cardiology at AIIMS-New Delhi, said: “The major problem is that this recommendation is not easily accepted by the people. These days many healthcare packages include treadmill tests. I recently had a person come to me with the report when they did not need it in the first place.”

He said that doctors will look at the age, gender, family history of heart conditions, risk factors such as diabetes and hypertension, and lifestyle factors like smoking to calculate the probability of heart attack or death due to such cardiovascular events. Based on this, they will determine whether a test is needed, and which one.

Surgery is not for all

The guidelines focus on the medical management of chronic heart diseases; experts say procedures like angioplasty, to open vessels in the heart, are needed and absolutely necessary only in very few cases.

Dr Paul said, “In the most common form of heart attack, an angioplasty performed within hours of it is beneficial. After 24 hours the risk is almost the same as the benefit.” Explaining the rationale behind the process, he said that during a heart attack, the blood supply to a part of the heart is cut off due to the blockage, and the muscles in that part start dying. An immediate angioplasty to open



the blockage in time saves the muscles. "Doing a procedure later on is like watering a paddy field after the crop has already died," he said.

The Tamil Nadu government, with Dr Paul as the nodal officer, is trying to promote immediate angioplasty across 18 healthcare centres. His team is also studying the impact of an angioplasty done between 24 to 72 hours.

Dr Bahl said in an acute condition such as a heart attack, angioplasty can be life-saving. Medical management is as effective as surgeries or procedures to re-establish blood flow in chronic conditions, except for a few for whom the medicines have stopped working, or are at a high risk of death due to cardiovascular events.

What does the guideline say about medicines to be used?

Statin

The guidelines say that statins remain the first line of treatment for high levels of bad cholesterol. "There are a lot of messages on social media against the use of statins or long-term use of the medicine. However, it continues to be the number one therapy not only for lowering the cholesterol level but also for reducing the risk of cardiovascular events. When prescribed, people should continue to take the medicine," said Dr Paul.

Dr Bahl added: "Other medicines such as ezetimibe or bempedoic acid may be prescribed in addition to statins in case the targets for LDL (low-density lipoprotein or bad cholesterol) are not achieved. These drugs are also recommended for people who cannot take statins because of adverse effects". He said that for people who have already had a heart attack the target LDL has been lowered to 55mg/dL, which is very low and may not be achieved through statins alone.

Anti-platelet medicine

Doctors usually prescribe medicines, such as aspirin, which prevent clotting of the blood after a heart attack or surgery in order to open blockages. The guidelines say, "Shorter durations of dual antiplatelet therapy are safe and effective in many circumstances, particularly when the risk of bleeding is high and the ischemic risk is low to moderate."

Dr Paul said that two anti-platelet therapies may be given for a short duration after acute symptoms, but they should not be continued for long as they may lead to bleeding. He added that long-term use is not as prevalent in Western countries where the insurance regulates how long it can be prescribed, but in India, it is sometimes prescribed for longer durations as patients pay for the medicines themselves and it is not very expensive.

Dr Bahl added: "Earlier, aspirin was prescribed to all heart patients. But the benefits of the medicine are offset by the risk of excessive bleeding. Aspirin is not recommended anymore; statins or other anti-platelet therapy may be used to prevent clots."

Beta-blockers

Beta-blockers are a class of medicines that reduce the stress on the heart and prevent abnormal rhythms. These medicines are usually prescribed after a heart attack. "There are studies to show that there is no benefit of using the medicine beyond a year or two after the heart attack," said Dr Bahl.



Why does it recommend wider usage of diabetes medicines?

The guidelines recommend the use of newer generations of diabetic medicines such as semaglutide and mounjaro – which are also known to reduce weight – even for people without diabetes. And, this is not just because it reduces the risk factor for heart disease – obesity.

“Around 20 years ago, a new class of diabetes drugs called glitazones was introduced. While it effectively lowered blood sugar levels, it also increased the risk of heart failure. Since the end game is not just to reduce blood glucose levels but to prevent deaths, it was decided anti-diabetes drugs would not be approved unless they were beneficial for the heart as well,” said Dr Bahl. He said this led to the search for new molecules and the eventual discovery of SGLT-2 inhibitors and GLP-1 receptor antagonist.

“These drugs have been shown to reduce the progression of coronary artery disease and heart failure,” said Dr Bahl.

Cost of treatment

The guidelines also recommend a team-based approach where the patient makes an informed decision about their health considering social determinants such as the costs of therapies. They say:

“Some new chronic coronary disease therapies are only available as branded formulations, and their high out-of-pocket costs can impede adoption or increase the risk of cost-related non-adherence... Therefore, clinicians have a key role in ensuring access and adherence to effective therapies by regularly discussing out-of-pocket costs.”

No need for supplements, e-cigarettes

One of the key takeaways of the guidelines also states that people do not use non-prescription supplements such as fish oil, omega-3 fatty acids, or vitamins as they have shown no benefit in reducing the risk of cardiovascular events.

The guidelines also specifically mention that e-cigarettes are not recommended as a tool for smoking cessation. Although e-cigarettes increase the odds of people quitting smoking, it says, it is not recommended because of a lack of long-term safety data and the risk of sustained use of e-cigarettes.

THE RELEVANCE OF U.S.’ FIRST OVER-THE-COUNTER BIRTH CONTROL PILL

In a landmark decision, the U.S. Food and Drugs Administration (FDA) on July 13 approved Opill, the first oral contraceptive that can be purchased over the counter without prescription — nearly 60 years after birth control was first introduced in the U.S. The American Medical Association (AMA) called the decision a “monumental step”, expected to expand access to a safe method of contraception in a stifling reproductive health landscape, barricaded with abortion restrictions and infrastructure gaps. “Since losing legally protected access to abortion care [under Roe v. Wade], there has been a frenzy of activity around restoring and enhancing reproductive care,” explains Sanjam Ahluwalia, a Women’s and Gender Studies professor at the Northern Arizona University. FDA’s decision comes “in response to the urgency of the moment”.



What is Opill?

The Opill, or the 'minipill', is a progestin-only pill (POP) using a synthetic version of the hormone progesterone called norgestrel. The typical combination birth control pill contains a formulation of both progesterone and estrogen. Opill's story goes back to 1973 when norgestrel was first approved for use in the U.S., but combination pills soared in popularity.

Opill uses low doses (0.075-milligram) of progestin to thicken the cervical mucus and thin the uterus's lining, blocking the sperm from the cervix. POPs also stop ovulation in some cases (40% of women continued to ovulate).

The approval means an over-the-counter pill will be available in pharmacies — akin to over-the-counter condoms, aspirin and other drugs. People can access the pill without consultations from a primary physician or gynaecologist. The Ireland-based manufacturer Perrigo said Opill will be available in the U.S. next year.

"Opill should be used daily, at the same time and continuously till one wants the contraceptive effect," explains Dr. Ankita Gharge, a gynaecologist. The effect of the pill lasts for roughly 24 hours. If delayed by more than three hours, the person may have to take a backup birth control for two days, she adds. Taken correctly, only two in 100 women get pregnant in their first year of taking norgestrel (a 98% efficacy), according to the FDA.

POPs are advised for those who are estrogen-intolerant, have a history of blood disorders, high blood pressure and heart problems.

The FDA advised against using Opill alongside hormonal contraceptives including oral tablets, vaginal rings or intra-uterine devices (IUD). Like other minipills, Opill is not for emergency contraceptive use. Minipill is not suitable for people with a history of breast cancer and undiagnosed vaginal bleeding. Other side effects include irregular menstrual bleeding, headaches, dizziness, nausea, acne, increased appetite, abdominal pain, per the FDA. Opill is currently sold without a prescription in the United Kingdom. More than 15.1 crore people opt for oral birth control pills globally.

Opill vs Combination

Hormonal birth pills vary by mode of action and direction of use. Combination pills are varied: there is a mixture of 'active' and 'inactive' (placebo, where there are no hormones) pills. One common type is 21 active pills and seven inactive pills. POPs, on the other hand, have a fixed composition of progestin in their 28-pill pack. The failure rate of is the same as that of combined pills, a study shows.

Oral contraceptive pills do not protect against HIV and AIDS, and other sexually transmitted infections (STIs), for which barrier contraceptives such as condoms are advised. "People can use POPs in combination with condoms," Dr. Gharge says. People's choice of pills will depend on individual health markers, desired contraceptive duration and their need to prevent sexually transmitted infections. Estrogen reduces the quantity of milk produced; combination pills are thus ill-advised for women who breastfeed. The rule of thumb, says Dr. Gharge, is to consult a doctor to find the right contraceptive.



How safe is Opill?

FDA validated the safety and efficacy of Opill based on eight clinical studies. They mapped 2,173 women, 53% of whom were Caucasian and 47% African American, between 15 to 49 years. A separate review of the literature examining minipill's efficacy also found the minipill "highly effective in clinical use".

FDA scientists previously voiced concern that minors and people with limited literacy may not adhere to label instructions, glimpsing over side effects. There is also a tendency to over-indulge in OTC birth control pills, mentions Dr. Gharge, adding that a lack of awareness about different contraceptives restricts women from making informed choices.

Label instructions on OTC pills thus function as a guiding star. The manufacturer demonstrated that consumers were able to use the product effectively relying only on the drug labelling, without any outside consultation, the FDA confirmed. A health panel in May said the public health benefits of making a nonprescription birth control pill available outweigh the "limited number of risks from the medication itself".

Reproductive rights remain unresolved globally: India, for instance, offers access to OTC pills and has extended abortion care to women irrespective of marital status, but contraceptive use remains the lowest among women from marginalised communities. The National Family Health Survey-5 found the burden of family planning responsibility falls mostly on women. Although abortion is legal, a report found 67% of abortions in India are unsafe. Entrenched stigma, shortage of doctors, public health gaps feed into contraceptive inequities.

The history of reproductive rights documents how contraceptive technologies, regulated by patriarchal norms, have encumbered women as 'users' for over a century. Add to this birth control pills' chequered past, intertwined with colonialism and eugenics. The pill has always promised imperfect salvation, activists argue, but complex problems make do with imperfect solutions. Activists say OTC access to pills cannot be viewed in isolation. Efforts to develop an inclusive vocabulary --- which articulates the need for sex education, affordable and safe contraceptives, and reproductive care -- must follow.

When birth control pills were introduced in the 1960s, "women joined the workforce in large numbers. There was empowerment, a freedom that women got from having access to the pill," Prof Ahluwalia says. The conversation has come full circle: "In 2023, we are at a point where women are singularly burdened with the responsibility of contraceptive usage."

HEPATITIS B KILLED BEETHOVEN, REVEALS FORENSIC DNA ANALYSIS

Medical investigations to determine the cause of the music maestro's death have finally ended after ancestral DNA forensics entered the equation. Today being World Hepatitis Day there is some added significance to the findings

Ludwig von Beethoven was born in 1770 in Bonn, Germany. His approach to music composition changed the way people appreciated music – from just a pastime, pleasurable hearing, to a transformational powerhouse intervention. Beethoven died in 1827 and decades prior to his death, he suffered multiple illnesses, so it was difficult to connect symptoms and signs of grave illness which remained a mystery even after his demise. Beethoven knew he was unwell and was dying. His hearing was progressively declining. He had multiple gastrointestinal issues from bloating to diarrhoea which haunted him since he was 20 years of age. He asked his favourite

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



physician, Johann Adam Schmidt that upon his death, he describe his illness and make his diagnosis public. Unfortunately, tragedy struck and Dr. Johann died early. Beethoven outlived him by 18 years and his request was denied.

Thus started one of the greatest medical investigations that featured some of the most intensive clinical and basic science research to find the maestro's actual cause of death. And the answers came 200 years later.

After his death, Beethoven's associates found multiple stacks of letters that the music maestro had written to his brothers, which described his illness, the painful ordeal and about him contemplating suicide to get out of the hell-cycle. The collection of letters came to be known as the Heiligenstadt Testament of 1802. Around the time of his death, his admirers snipped numerous locks of his hair and kept them as personal collections. The eight locks were named thus: Müller, Bermann, Halm-Thayer, Moscheles, Stumpff, Cramolini-Brown, Hiller, and Kessler Lock Collections.

The quest to find the cause of Beethoven's death relied heavily on bibliographic sources, including Beethoven's letters, conversation books and diaries, and the accounts of his contemporaries, including doctor's notes, autopsy reports, and descriptions of bone material after exhumations in 1863 (for moving to a new sarcophagus) and 1888 (for moving to a new cemetery). Additionally, analyses of tissue sources claimed to originate from the music composer have been performed, including toxicological analyses of hairs of from private collections of unknown authenticity and palaeopathological examinations of skull fragments.

In 2007, a group of researchers led by Christian Reiter of the Medical University of Vienna claimed that the cause of Beethoven's death was lead poisoning. They claimed that his doctor had probably killed him because he had repeatedly used lead-based salts to clean wounds and during drug administrations which eventually poisoned him, resulting in his death. This conclusion was made, after chemical analysis of one of the collected hair locks was analysed exhaustively. The lead poisoning theory of Beethoven's death stuck with the medical and music community for decades.

Beethoven suffered from three major issues – progressive hearing loss, recurrent abdominal pain and diarrhea and two attacks of jaundice, the last one towards the end of 1826, culminating in his death. He had fluid in his abdomen that had to be removed using a large bore needle.

The composer received abdominal punctures four times on his deathbed, draining up to 14 liters of fluid from his abdominal cavity each time – a procedure known as large volume paracentesis of ascites. The lead poisoning theory was unable to substantiate all of the disease-related challenges Beethoven faced, especially the autopsy finding of chronic liver damage or cirrhosis.

The truth remained buried until now in 2023 when the indomitable Tristan Begg, from the Department of Archaeology, University of Cambridge used modern DNA extraction techniques along with a masterful method called genome-wide association studies using ancestry DNA databases on the seemingly worthless item recovered from Beethoven centuries ago – all eight locks of his hair found by private collectors.

Genetic data are used to estimate the geographic origins of a person's recent ancestors in genetic ancestry testing. It entails comparing the frequencies of a large number of DNA variants measured in an individual to the frequencies of these variants in reference populations collected from around the world – a large database created as a result of various companies performing direct-to-consumer DNA analysis on personally and voluntarily submitted samples.



The geographic region with the highest frequency of an individual variant is thought to be the most likely location of an ancestor who passed the variant on to the person being tested.

Traditional ancestry analysis includes testing for the mitochondrial DNA (transmitted only by females and reflecting the origin of one maternal ancestor) and the Y chromosomal DNA (transmitted only from father to son and reflecting the origin of one paternal ancestor).

In Beethoven's case, the DNA sequencing on four and an additional one of the eight locks was found to come from from the same individual, a male of European heritage – meaning, the others were not authentic. And surprisingly, the three locks with less authenticity came from three other unrelated individuals. Interestingly, analysis of one of those hair samples – the so-called Hiller Lock, showed high levels of lead and that it came from that it came from a woman likely of North African, Middle Eastern, or Jewish ancestry, which was the reason for wrong diagnosis of lead poisoning in the first place by the previous group of researchers.

So, what did Beethoven die of? He had died of liver disease. His autopsy showed cirrhosis. But what was killing his liver? The brilliant genome analysis found two genes that are now notoriously known to cause liver cirrhosis – the PNPLA-3 gene and HFE-gene mutation both of which are associated with chronic liver damage. But they did not act alone.

There had to be a driving factor which caused the chronic damage. And the researchers found it. One of humankind's most ancient friend, but also its greatest foe – alcohol. From interviews and documented conversations with friends and contemporaries, it was evident that the maestro consumed a significant amount of alcohol, which, along with genetic mutations resulted in cirrhosis and his death. But Tristan Begg and his colleagues were not ready for what was coming next.

Along with the genetic mutation and the alcohol was another tiny but devastatingly ancient pathogen which they found in his hair strand on DNA analysis. And they knew that this little monster drove Beethoven to his death with everything else at the back seat – the Hepatitis B virus.

And two centuries after his death, and medical sciences' fascination with research and diagnosis, and with our curiosity with Beethoven that led us to probe every corner of his life – his letters, his writings, his medical records, and now his very DNA – the cause of the brilliant musician's death was finally unravelled - cirrhosis brought on by alcohol and a multiple-gene-related inherited liver risk driven to failure by the presence of Hepatitis B virus infection. This is why medical science exists.

And as our scientific tools become sharper, we look forward to unravelling the mysteries of human health (and death) to prevent and defeat suffering.

But did I tell you the biggest scandal of all in this hardcore analysis project which flabbergasted even the researchers? Ancestral DNA analysis revealed that the Y-chromosome that Beethoven inherited was not of Aert van Beethoven – his presumed biological father, but another man, strongly suggestive of an extramarital paternity event, which mind-numbingly means that "Beethoven may not have been a Beethoven."