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INTERNATIONAL

SHATTERING GLASS CEILINGS

Setting a historic milestone, Ketanji Brown Jackson became the first Black woman to be confirmed to the U.S. Supreme Court by the Senate. She is also the first former public defender to be nominated to the country's top court and will replace Justice Stephen Breyer for whom she once worked as a law clerk. In her speech after her nomination to the Supreme Court was confirmed, Judge Jackson thanked Justice Breyer for the opportunity to work with him early on in her career. "My clerkship with Justice Breyer, in particular, was an extraordinary gift and one for which I've only become more grateful with each passing year."

Judge Jackson was confirmed to the Supreme Court by 53 votes in favour of her, which included three Republican votes. Vice President Kamala Harris, the first Black woman to hold the post, presided over the vote as the leader of the Senate. A total of nine justices make up the U.S. Supreme Court panel. With Judge Jackson's appointment, the number of women justices on the panel will rise to four.

"It has taken 232 years and 115 prior appointments for a Black woman to be selected to serve on the Supreme Court of the United States. But we've made it. We've made it, all of us. All of us," Judge Jackson said, invoking a round of applause from the attendees at the South Lawn in White House after her nomination was confirmed.

During his campaign before the 2020 presidential election, Joe Biden had pledged that he will nominate a Black woman to the Supreme Court if a vacancy arises during his tenure.

WHY DOMINATING BLACK SEA IS CRUCIAL FOR RUSSIA

The sinking of the warship Moskva, the 600-foot, 12,500-tonne flagship of the Russian Black Sea Fleet — whether due to a Ukrainian missile strike or, as Russia claims, a fire on board — is a serious setback for Russia.

The reversal is both military and symbolic, proof that its vessels can no longer operate with impunity, and a damaging blow to morale. On the other hand, it lifts Ukrainian hopes, demonstrating the defenders' homegrown technological capacity, and exposing a weakness in the Russian navy's anti-missile defences.

It also puts a question mark on Russian plans for an offensive on the city of Odessa through amphibious means.

Russia and the Black Sea

The famed water body bound by Ukraine to the north and northwest, Russia and Georgia to the east, Turkey to the south, and Bulgaria and Romania to the west, which links to the Sea of Marmara through the Bosphorus and then to the Aegean through the Dardanelles, has traditionally been Russia's warm water gateway to Europe.

For Russia, the Black Sea is both a stepping stone to the Mediterranean as well as a strategic buffer between NATO and itself. Domination of the Black Sea region is a geostrategic imperative for Moscow, both to project Russian power in the Mediterranean and to secure the economic gateway to key markets in southern Europe.

The Black Sea Fleet has a long history, and is considered to have been founded back in 1783. It comprises warships of the Russian Navy in the Black Sea, Sea of Azov, and the eastern Mediterranean, and is headquartered at Sevastopol, the major port on the Crimean peninsula.

Although Crimea became part of Ukraine after the USSR collapsed, the Russian Navy continued to have its base in Sevastopol as part of an agreement between the two countries. In 2014, Russia annexed Crimea.

In a paper titled 'The Naval Power Shift in the Black Sea' written for War on the Rocks, an online platform for analysis and debate on strategy, defence, and foreign affairs, Michael B Petersen, director of the Russia Maritime Studies Institute at the US Naval War College, said: "Moscow's objectives in the region are not only merely limited to the Black Sea basin.

"While the Black Sea Fleet assists with the defence of southern maritime approaches to Russia, it also allows Moscow to use the Black Sea as a jumping off point into the eastern and central Mediterranean. From Moscow's perspective, these activities enable its diplomacy and power projection into areas where Russia previously had limited influence, and they retard what Russia believes are US and NATO efforts to destablise its partners in places like Syria."

Black Sea in the Ukraine war

Russia has been making efforts to gain complete control over the Black Sea since the Crimean crisis of 2014.

During the ongoing invasion, the domination of the Black Sea has been a major Russian objective, along with the land bridge to connect Russia and Crimea. As such, there have been intense efforts to capture Mariupol, the Sea of Azov port in the breakaway eastern Ukrainian oblast of Donetsk. On Friday (April 15), Mariupol appeared close to falling to the Russians.

Gen Sir Richard Barrons, a former commander of the UK Joint Forces Command, has been quoted as saying that the capture of Mariupol will complete Russia's land bridge to Crimea, give it control over more than 80 per cent of the Ukrainian Black Sea coastline, and cut off its maritime trade.

Russia was also expected to focus its military efforts on Odessa, to the west of Crimea. If the Odessa region were to fall as well, Ukraine would lose access to its entire Black Sea coastline and would in effect be reduced to a landlocked country. That would be a devastating blow to the Ukrainian economy.

The Odessa oblast has a muti-ethnic population wherein the Russians form the second largest group. It is also the largest region in Ukraine which serves as an important energy and transport corridor with abundant natural resources. The Rhine-Main-Danube canal connects the Black Sea to the Atlantic Ocean and the North Sea and the port of Odessa serves as a vital link between Ukraine and the outside world.

The loss of the Moskva is, however, expected to put brakes on an anticipated amphibious assault on Odessa. But the tempo of its attack on all points along the Black Sea which are still under Ukrainian control will likely increase. This may be through rocket forces, aerial bombardment, or offshore ships launching cruise missiles.

Sinking of the Moskva

Russian news outlets have described the Moskva as one of the Russian Navy's biggest ships. It had been deployed by Moscow to the coast of Georgia during the 12-day war over South Ossetia and Abkhazia in August 2008, and to support Russian troops and equipment in Syria in 2015. After Russia invaded Ukraine in February, ships of the Black Sea Fleet, including the Moskva, fired a barrage of missiles into Ukraine, and blocked the country's access to the Black Sea.

The sinking of the Moskva is believed to be the worst loss in the history of naval warfare since the sinking of the Argentine naval cruiser General Belgrano by a British submarine on May 2, 1982, during the Falklands War.

The fact that the Moskva was sunk by shore-based anti-ship cruise missiles which took advantage of bad weather and used decoy UAV attacks to defeat the ship's air defence systems demonstrates the success of outside-the-box measures adopted by Ukraine in the war.

In its Intelligence Assessment Report on the incident, the UK Ministry of Defence has said: "This incident means Russia has now suffered damage to two key naval assets since invading Ukraine, the first being Russia's Alligator class landing ship Saratov on March 24. Both events will likely lead to Russia to review its maritime posture in the Black Sea."

UKRAINE AND BEYOND

At their virtual conversation on Monday night, Prime Minister Narendra Modi and US President Joe Biden navigated carefully between two competing narratives that have defined the bilateral discourse on Ukraine. For Delhi, it was about unacceptable pressure on India to stop buying oil from Russia; it was also about affirming India's right to pursue its own interests. The narrative in the US and Europe, in contrast, was about India defying global norms by helping Russia circumvent sanctions. The engagement in Washington this week — which saw Modi and Biden give guidance to the so-called two plus two dialogue of their defence and foreign ministers — helped clarify that India was not violating any sanctions by its oil purchases. The US has also made it clear that it is not demanding an end to India's oil acquisition from Russia but urging Delhi not to ramp up its purchases. Given the limited share of Russian oil in Indian imports — barely two per cent — grandstanding in both capitals was unnecessary.

The divergence between India and the US on Ukraine, however, goes beyond oil. India has taken a while coming to terms with the political backlash in the West against Russia's resort to war in the heart of Europe. Long accustomed to viewing Europe through Russian eyes, India was unwilling to pronounce on the unacceptability of the Russian invasion. But Delhi has made steady adjustments to its position, by coming out more clearly in recent days against the Russian violation of the UN charter and international law, and for Ukraine's territorial sovereignty. At the talks with Biden, Modi did not name Russia but raised concerns about the Bucha massacre. For the US, the crisis has provided an opportunity to understand India's inability to take a more forthright approach to the Russian invasion, especially Delhi's dependence on Moscow for weapons as well as the imperative to prevent Russia from getting too close to China. Biden offered to help reduce India's strategic dependence on Russia, and welcomed India's humanitarian assistance to Ukraine. Modi and Biden also explored potential Indian contribution in addressing global food shortages triggered by the Ukraine war.

Meanwhile, the two plus two talks revealed wider dimensions of the bilateral relationship — the expanding areas of engagement are highlighted by the agreement on Space Situational Awareness that will let India and the US share information on the growing activity in outer space. Although

India-US differences on European security are front and centre today, the convergence of their interests in the Indo-Pacific is deep and enduring. Modi and Biden are right in their determination to minimise the former and build on the latter.

A NEW COCKTAIL

The first round of France's presidential election on Sunday has shown how the country's political landscape, once dominated by the traditional social democratic and conservative parties, has shifted to a more polarised direction. While Emmanuel Macron, the sitting President, came top with 27.8% of the votes, Marine Le Pen, a far-right, anti-immigrant leader, finished second with 23.1%. The conservative and socialist parties crumbled — with a combined 6.7% vote — while the far-right and leftist candidates won more than half of the polled votes. The run-off, on April 24, will determine who is to lead the European Union's second largest economy. Opinion polls suggest that the race will not be easy for Mr. Macron as Ms. Le Pen, whose popularity was at 16% in February, has gained a lot of ground. If in 2017, Mr. Macron defeated Ms. Le Pen in the run-off with a whopping 32 percentage point margin, his lead now, say polls, is between two to six points. While resentment over inflation and the rising cost of living remains high, Ms. Le Pen is offering a cocktail of hard nationalism and anti-establishment politics to win over disaffected voters without losing her far-right base.

Five years ago, there was large-scale consolidation among the voters from across the political spectrum, often referred to as the 'republican front', behind Mr. Macron. They wanted to defeat Ms. Le Pen's dangerous politics, which they believed was against the French republican values. The biggest challenge he faces today is in keeping this coalition intact while facing a more powerful rival. Leaders of the conservative and leftist parties have endorsed Mr. Macron for the run-off, but it is not clear, given the political changes under way, whether their voters would follow suit. In 2017, Mr. Macron was a new face — an outsider with a liberal, progressive heart. But as President, his pro-business policies have alienated leftist voters, who supported Jean-Luc Mélenchon in the first round. Mr. Macron's decision to close down some mosques and crack down on religious organisations have also led to cracks in the social coalition that backed him in 2017. Ms. Le Pen, already powered by the anti-immigrant hard nationalists, is trying to win over the anti-capitalist voters angry with Mr. Macron. She has also taken a nuanced view of the Ukraine war. While she has condemned it, she is critical of the sanctions, which Mr. Macron supported in coordination with the EU and the U.S. Her argument is that the sanctions are hurting French consumers. She also wants to take French troops out of NATO's military command. A Le Pen win would alter the character of France's polity and challenge the combined efforts of the EU and NATO in opposing Putin's war on Ukraine. This possibility is what makes the April 24 run-off one of the most consequential presidential elections in France in decades.

RED STAR OVER SOLOMON ISLANDS

The story so far: A recent leaked document has revealed that the Solomon Islands in the South Pacific has reached a deal with China which outlines an unprecedented level of security cooperation. This is the first deal of its kind for Beijing in the region. Honiara's confirmation of the move has raised alarms in Washington and Canberra, which have extensive stakes in the South Pacific.

What are the contents of the proposed deal and why are they controversial?

The document titled 'Framework Agreement between the Government of the People's Republic of China and the Government of Solomon Islands on Security Cooperation' was leaked through social media on March 24. It created a huge controversy domestically as well as internationally because it has the potential to disturb the established security mechanisms in the South Pacific region. The document explicitly enables Beijing to send its "police, armed police, military personnel and other law enforcement and armed forces" to the islands on the latter government's request, or if the former sees that the safety of its projects and personnel in the islands are at risk.

The document also provides for China's naval vessels to utilise the islands for logistics support. There have been speculations in the wake of this revelation that China might be building its next overseas naval base in Solomon Islands after Djibouti, which was also incidentally referred to as a logistics support base.

Dismissing the prospects for any foreign military base, the government of Solomon Islands affirmed the finalisation of the draft of such a deal. The deal is not yet signed and it is not fully known whether the provisions mentioned in the leaked document are present in the final draft.

What is the rationale for the Solomon Islands' increasing proximity to China?

The Solomon Islands is part of the ethnically Melanesian group of islands in the Pacific and lies between Papua New Guinea and Vanuatu. The islands, which were initially controlled by the British Empire during the colonial era, went through the hands of Germany and Japan and then back to the U.K., after the Americans took over the islands from the Japanese during World War II.

The islands became independent in 1978 to become a constitutional monarchy under the British Crown, with a parliamentary system of government. Nevertheless, its inability to manage domestic ethnic conflicts led to close security relations with Australia, which is the traditional first responder to any crisis in the South Pacific. The Solomon Islands had cultivated strong ties with Taiwan, which ended with the emergence of the current government in Honiara.

In 2019, the new government headed by Prime Minister Manasseh Sogavare switched Taiwan for China. This was supposedly after Beijing offered half a billion U.S. dollars in financial aid, roughly five times what Taiwan spent on the islands in the past two decades. It has been alleged by the pro-Taiwan Opposition that the Sogavare government has been bribed by China. As the money from China flowed in, so did the adverse impact to the local population from Chinese businesses, Chinese labourers for Chinese infrastructure projects, as well as a perceived preferential treatment for Chinese interests by Honiara.

The switching of diplomatic relations along with the general dissatisfaction with the government, led to widespread Opposition protests and riots in Honiara in November 2021. Strikingly, these riots targeted Chinese assets in addition to government property. The government has also notably mentioned that the move is aimed at diversification of its security partnerships, taking aim at its longstanding security dependence on Australia.

Why is China interested in the Solomon Islands?

The Pacific islands are among the few regions in the world where China has competition from Taiwan for diplomatic recognition. China considers Taiwan to be a renegade territory awaiting reunification, and opposes its recognition as an independent state on the international stage. Hence, any country which has to officially establish relations with China will have to break diplomatic ties with Taiwan. The Solomon Islands was one among the six Pacific island states

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which had official bilateral relations with Taiwan. However, in 2019, the Solomon Islands, along with Kiribati, switched allegiance to China. This has left only four regional countries backing Taiwan, mostly belonging to the Micronesian group of islands which are under the control of the U.S.. The small Pacific island states act as potential vote banks for mobilising support for the great powers in international fora like the United Nations.

Moreover, these states have disproportionately large maritime Exclusive Economic Zones when compared to their small sizes, the reason why these 'small island states' are seen also seen as 'big ocean states'. Solomon Islands, in particular, have significant reserves of timber and mineral resources, along with fisheries. But more importantly, they are strategically located for China to insert itself between America's military bases in the Pacific islands and Australia. This is especially significant in the current scenario, given the emergence of the AUKUS (Australia, the U.K. and the U.S.) which seeks to elevate Australia's strategic capabilities vis-à-vis China through Anglo-American cooperation. Nonetheless, the anti-China nature of the 2021 riots in Honiara turned out to be the immediate trigger for Beijing to ramp up its security cooperation with the Solomon Islands.

What does this mean for the established geopolitical configuration in the region?

The Pacific islands, in the post-World War II scenario, were exclusively under the spheres of influence of the Western powers, in particular the U.S., U.K., France and the regional heavyweights, Australia and New Zealand. All of them have territorial possessions in the region, with the three nuclear powers among them having used the region as a nuclear weapons testing ground. The smaller island nations of the region are heavily dependent on them, especially Australia as it is a resident power. This established power structure in the region is being increasingly challenged by China through the steady displacement of Taiwan and the cultivation of economic and political clout. Its proposed deal with the Solomon Islands has added a security dimension to its fast-growing profile in the region. Australia has reacted with boosted finances, and by extending its current security mission till 2023 when the islands will host the Pacific Games. The U.S. has responded by considering reopening its embassy in Honiara after a long 29-year gap. New Zealand has shed its typical restraint about China and has criticised it for attempting to militarise the Pacific islands.

However, it is to be noted that China's rise in the South Pacific is not without opposition. AUKUS is a recent example of how the established powers are reacting; although, to what extent they can mobilise individual governments against China is questionable. Significant discontent has been brewing within and among the Pacific island states against China's economic inroads and its adverse impact on their vulnerable economic and political systems. The riots in Honiara is only the recent one in the region which has an anti-China tint. The Nuku'alofa riots in Tonga (2006) had a similar character. The geopolitics of the region is undergoing an unprecedented flux in tandem with the larger shifts in the Indo-Pacific, suggesting an intensification of regional great power rivalry and domestic volatility for the Pacific island states in the coming years.

THE NO-CONFIDENCE VOTE IN PAKISTAN

The story so far: For the fourth time in a week, Pakistan will awake to the possibility of a new Prime Minister being chosen by the National Assembly, after surprise moves by now-ousted Prime Minister Imran Khan and his party the Pakistan Tehreek-e-Insaaf (PTI), ensured delay after delay in the process of the no-confidence motion against him. The election of the new PM originally scheduled for April 3, then stipulated under a Supreme Court order to have been held on April 9,

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is now due to be taken up on Monday. According to state-run media, the National Assembly Secretariat has accepted nomination papers of Shehbaz Sharif, the joint Opposition candidate of Pakistan Muslim League (PML-N) and that of Shah Mahmood Qureshi, PTI Vice Chairman and Mr. Khan's Foreign Minister, to be voted on Monday at 2 p.m.

Why didn't the vote for the new PM take place over the weekend?

Despite very specific stipulations by the Supreme Court on convening the Assembly no-confidence motion vote against Khan no later than 10:30 a.m. on Saturday, the Assembly speaker Asad Qaiser first allowed a lengthy debate on the "foreign conspiracy" allegations levelled by Mr. Khan. In a national address on April 3, Mr. Khan alleged that there was a "regime change operation" underway against him at the behest of the United States. He even named U.S. Assistant Secretary of State Donald Lu for threatening Pakistan's Ambassador to the U.S. with consequences for Pakistan if Mr. Khan was allowed to win the confidence vote. In the Assembly, Mr. Qureshi claimed that U.S. National Security Adviser Jake Sullivan also called Pakistan National Security Adviser Moeed Yusuf, to tell him to stop Mr. Khan from visiting Russia on February 24.

The U.S. has categorically denied the claims. As the day wore on, with no end to the lengthy speeches, it seemed the PTI government would not allow the vote, and rumours went rife through Pakistan's capital, including one that Mr. Khan was dismissing the Army Chief, and another that the Army was gathering forces to take Mr. Khan out forcibly.

Neither proved true however, and minutes before the Supreme Court-laid midnight deadline, the Speaker announced the no-confidence vote. In all, 174 votes were cast against Mr. Khan, two more than the majority mark in the 342-seat Assembly. Speaker Asad Qaider then stepped down, and it wasn't until Sunday that nominations could be called for and scrutinised by the Assembly secretariat.

Does the Opposition have the numbers?

Not since former Prime Minister Benazir Bhutto's assassination have the two main Opposition parties, which have ruled Pakistan at different times — the PML-N and the Pakistan People's Party (PPP) —formed a government together. After 2008, when the party leaders Nawaz Sharif and Asif Ali Zardari fell apart, they attempted to form the Pakistan Democracy Movement (PDM) with a number of other parties, but Mr. Zardari soon walked out of that. This time around, the PPP and the PML-N are joined in the effort to oust Mr. Khan with religious parties as well as more secular and regional parties from Khyber Pakhtunkhwa and Balochistan. Greeting the Assembly after the no-confidence vote, Mr. Zardari's son Bilawal Bhutto took a dig at Mr. Khan's promise of a "Naya Pakistan", which often translated into rejecting and criticising Pakistan's older and more established leaders. "Welcome back to Purana (Old) Pakistan," he said. In a new government under Shehbaz Sharif, all eyes will be on whether Mr. Bhutto will be in the cabinet, with some even speculating a stint in the Foreign Office, even as the new Prime Minister deals with the mammoth challenges, of managing such a massive coalition of parties.

How has Imran Khan reacted to the defeat?

Mr. Khan, who had walked out of the Assembly with his party members before the confidence vote on Saturday, surfaced for party meetings on Sunday. In a tweet, he indicated that he planned to return to the streets to protest what he still maintains is a "foreign conspiracy of regime change". "Pakistan became an independent state in 1947; but the freedom struggle begins again today," Mr. Khan wrote.

Meanwhile PTI senior leader and former Information Minister Fawad Chaudhary indicated that the entire party would resign from the Assembly on Monday, and it remains to be seen if that threat is carried out. The new government elected would, in the absence of any other legal and political hurdles, remain in office for more than a year, with the current Assembly set to be dissolved on or before August 13, 2023, and general elections held by October 2023.

What other challenges would Shehbaz Sharif, if elected, face?

In a strange coincidence, Mr. Shehbaz Sharif and his son Hamza Sharif, who is in the running as the next Chief Minister of Punjab, are also due to appear before a special court for indictment on Monday, the same day he expects to be elected in the National Assembly.

Mr. Sharif and his son have rejected the allegations in the case that was brought against them by federal authorities in 2019 for "money laundering" — an amount totalling PKR 14 billion ($75 million). Mr. Shehbaz Sharif called the "money laundering case" registered in the U.K. a political conspiracy by Mr. Khan. Both he and his son had been arrested in the case, and are now out on bail. Significantly, within hours of Mr. Khan losing the vote, the chief investigating officer in the case went on leave, anticipating a "certain transfer" if the government were to change. While the case itself may not pose much of a problem for Mr. Sharif, there are a number of other challenges any new government must face in terms of stemming the losses in the Pakistani economy, dealing with the situation in Afghanistan, terrorism domestically, and rebuilding ties with countries like India and the U.S., which have been in a state of disrepair during Mr. Khan's tenure.

ALARM BELLS OVER NEPAL'S DWINDLING FOREX RESERVES

The story so far: In an unusual development, the government of Prime Minister Sher Bahadur Deuba sacked the head of its central bank, Maha Prasad Adhikari, last Friday accusing him of leaking sensitive information and for failing to perform his duties. The decision, which violates the autonomy of Nepal Rastra Bank, was taken in the backdrop of tense relations between Finance Minister Janardhan Sharma and Mr. Adhikari over how to address Nepal's crisis of falling forex reserves. According to an April 12 report on the 'Current Macro Economic and Financial Situation' by Nepal Rastra Bank, the country's forex reserves have plummeted by 18.5% to $9.58 billion in March from $11.75 billion in July 2021. The current forex reserves are enough to pay the government's import bills only for the next seven months or so, say experts.

Why have Nepal's forex reserves fallen?

Nepal's economy is highly dependent on imports as the country buys a range of merchandise goods apart from fuel. The prevailing weak economic indicators mean that Nepal is spending from its forex reserves faster than it can save. Renowned Nepalese economist Bishwambhar Pyakurel, former head of the Department of Economics of Tribhuvan University in Kathmandu, contends that Nepal will soon have double-digit inflation. "If current trends continue then double-digit inflation will hit us by June/July," said Dr. Pyakurel. According to the Nepal Rastra Bank, the current rate of inflation is 7.14%.

How bad is the situation?

Nepal's forex reserves situation appears healthy as of now as the country, unlike Sri Lanka, is not burdened by external debt. There are, however, concerns that the lower middle income economy

is being battered repeatedly by external factors and that may precipitate a crisis sometime soon. Nepal which is blessed with one of the finest tourism sectors in South Asia, because of the Himalayan mountain range, suffered during the COVID-19 pandemic as global tourist flow fell. This was followed by the global energy crisis caused by Russia's invasion of Ukraine. This has put extraordinary inflationary pressure on the economy. Dr. Pyakurel says all economic indicators are declining and the real shortfall in forex reserves is because of the decline in foreign remittances which suffered during the pandemic when the Nepalese work force abroad suffered job losses. The situation has not stabilised and Nepal's forex reserves continue to slide.

Can the energy scene in Nepal escalate economic woes?

Nepal's primary supplier of energy is Indian Oil Corporation (IOC). Nepal Oil Corporation (NOC) pays IOC in two instalments every month, on the 8th and the 23rd. The NOC has been in crisis for months as high global prices depleted the company's savings, prompting it to approach the government for a lifeline. The Government of Nepal has agreed to provide NOC the necessary amount to continue supplies from IOC. There were concerns in Kathmandu about the payment due on April 23, but for the time being sufficient funds have been allocated to NOC to pay IOC for the next instalment. However, NOC's financial status makes it unattractive for banks and as a result the public sector company does not enjoy confidence in the market. Dr. Pyakurel, however, says there is a need to protect NOC from the effects of the current energy crisis in the world which has erupted after the Ukraine crisis. Nepal's history shows that any uncertainty regarding fuel can trigger serious internal problems as was visible during the 2015-16 blockade when disruption of fuel supply from India caused distress in Nepal.

Will the economic situation have an impact on upcoming elections?

Nepal will hold local level polls on May 13 which will be followed by general elections towards the end of the year. The election process requires considerable financial allocation and Nepal has received support in the past for elections from international donors like the USAID. These donors help in carrying out pre-election staff training and logistics that are part of any democratic process. But there are uncertainties about such international support because of the difficulties that most of the traditional partners are facing. Dr. Pyakurel said the Election Commission of Nepal will require at least 10 billion Nepali rupees for the election process and that will mean diversion of a large amount of resources for the democratic process.

Where do the political parties stand?

Nepal's political process will begin from May when the Nepali Congress will be challenged by the Communist Party of Nepal (UML). The political dynamics are partly responsible for the friction between finance minister Janardhan Sharma and the suspended Rastra Bank chief appointed by the previous government of Prime Minister K.P. Sharma Oli, who was in power till July 2021. Mr. Sharma, a former Maoist commander, belongs to the Pushpa Kamal Dahal 'Prachanda'–led Maoist Centre of the ruling alliance. Dr. Pyakurel points out that the political bickering may have been a contributory factor to the worsening economic situation.

UNDERSTANDING THE SOVEREIGN DEBT CRISIS IN SRI LANKA

The story so far: The Sri Lankan government on Tuesday decided to default on all its foreign debt worth $51 billion as it awaits financial assistance from the International Monetary Fund (IMF). The government stated that it took the decision to preserve its dwindling foreign reserves to pay

for the import of essential items. Ratings agencies such as Fitch, and Standard & Poor's have downgraded Sri Lanka's sovereign debt.

What is sovereign debt?

Sovereign debt refers to the debt issued or accumulated by any government. Governments borrow money to finance the various expenses that they cannot meet through their regular tax revenues. They usually need to pay interest on such debt along with the principal amount over time although many governments simply choose to borrow fresh debt to repay existing debt. Historically, governments have tended to borrow more money than they could actually repay in order to fund populist spending.

It should also be noted that governments can borrow either in their local currency or in foreign currency like the U.S. dollar. Governments usually find it easier to borrow and repay in their local currency. This is because governments with the help of their central banks can easily create fresh local currency to repay debt denominated in the local currency. This is known as debt monetisation and it can lead to increased money supply which in turn causes prices to rise. Making good on their foreign debt which is denominated in a foreign currency, however, can be a tricky affair for governments. This is because governments depend on the inflow of foreign currency to gather the necessary foreign exchange to pay their foreign debt. The Sri Lankan government or the central bank, for example, cannot create U.S. dollars out of thin air to pay their foreign debt denominated in U.S. dollars. Instead, they depend on U.S. dollars flowing into Sri Lanka in the form of foreign investment and payments received in exchange for the export of various goods and services to build up their foreign reserves.

Why is Sri Lanka unable to make good on its foreign debt commitments?

Sri Lanka depends heavily on its tourism sector to bring in the foreign exchange necessary to import essential items such as food and fuel. The tourism sector contributes to about 10% of Sri Lanka's gross domestic product. Since the coronavirus pandemic and the ensuing lockdowns, Sri Lanka's tourism sector has been hit hard. This, in turn, has affected the inflow of U.S. dollars into the Sri Lankan economy. Sri Lanka's forex reserves have dropped to $2.3 billion in February this year from over $7.5 billion in 2019. Thus, the Sri Lankan government has been finding it hard to obtain the U.S. dollars necessary to make good on its foreign debt obligations. It has thus sought help from the IMF as well as countries such as India and China. India this week agreed to offer additional financial assistance of $2 billion to Sri Lanka by rolling over debt that the island nation owes India.

Sri Lanka's efforts to fix the exchange rate of the Sri Lankan rupee against the U.S. dollar in order to prop up the price of the rupee may have also played a role in the foreign debt crisis. As foreign exchange inflows dried up during the pandemic and the Sri Lankan rupee came under increasing pressure, the country's central bank at a certain point banned the payment of more than 200 Sri Lankan rupees for one U.S. dollar. This rate was way below the actual market price of the dollar, which caused trades to be pushed into the black market and also caused a drop in the supply of U.S. dollars in the forex market.

What is the cost of defaulting on foreign debt?

International lenders may be reluctant to lend any more money to the Sri Lankan government unless such lending is part of a restructuring agreement. This fact will also be reflected in the ratings that international ratings agencies give to debt issued by the Sri Lankan government. Going

forward, the cost of fresh borrowing is likely to be high for the Sri Lankan government as lenders will be incurring greater risk while lending to a government that has been unable to make good on its previous commitments.

A bailout by the IMF could be on the cards, but the Sri Lankan government will have to agree to implement structural reforms as a pre-condition for such aid. The IMF may require the Sri Lankan government to end its aggressive push towards 100% organic farming that has caused food supplies to be affected and food prices to rise. It may also recommend getting rid of price controls on food and other essential goods. It should be noted that price controls on any commodity affect the incentive that producers have to bring fresh supplies into the market. Controls imposed on the exchange rate of the rupee may also need to go in order to re-attract U.S. dollars. An end to price controls and the ban on non-organic farming can help the domestic economy return to normalcy. This, in turn, can help in the return of tourists. At the moment, mass protests due to rapidly rising prices may be causing many tourists to avoid visiting Sri Lanka, thus worsening the country's foreign debt crisis.

INDIA FINALLY ON BOARD, BUT TRINCOMALEE OIL FARM NOW WAITS FOR ECONOMY CRISIS TO LIFT

This is the deal: 85 decrepit oil tanks in 850 acres of dense jungle, and a strategic natural harbour. The foliage is so thick that the place is now home to several species of animals and birds, and cutting down the trees needs government permission. One day, it could be key to Sri Lanka's energy security while giving India additional capacity for reserves.'

India's prized agreement with Sri Lanka for the joint development of the Trincomalee Oil Tank farm, signed earlier this year after a 35-year wait, may take years to turn around and at least a 100 million dollars. The twin economic and political crises in Sri Lanka carry their own risks.

On April 12, Sri Lanka officially announced that it was temporarily suspending repayment of external debts worth $51 billion. It is now seeking a bailout from the International Monetary Fund (IMF) and other multilateral organisations. It does not have the dollars to repay these debts.

Officials driving the Trinco oil storage project said they are keeping their fingers crossed and have "maximum optimism" that with the IMF negotiations set to begin, "things will start falling in place" for the Sri Lankan economy. With a ballpark cost of $75-100 million for the entire development, the project will need to borrow from international lenders, who will take into account both Sri Lanka's political and economic stability.

The agreement gives India a strategic footprint on Sri Lanka's eastern coast, with access to the China Bay harbour, said to be the finest natural harbour in Asia. It was after years of indecision amid opposition from worker unions at Ceylon Petroleum Corporation (CPC) that the Sri Lankan state-owned oil company signed off on the agreement with Lanka Indian Oil Corporation (LIOC) on January 18, paving the way for the formation of the joint venture called Trinco Petroleum Terminals Ltd (TPTL). Under the agreement, CPC will develop 24 of the tanks, and TPTL will develop the remaining 61.

The joint development was first mentioned in the 1987 India-Sri Lanka accord. An agreement was nearly reached in 2003, but was never finalised. While negotiations had been going on for a year, it was after former finance minister Basil Rajapaksa's December 2021 visit to Delhi with a request

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for financial assistance to help Colombo cope with its economic meltdown, that the agreement was fast-tracked.

After being set up, the TPTL board has met four times, and an international tender has been floated for a consultant to prepare a detailed feasibility report. "When we approach financial institutions, we need the DFR. It is the most crucial document," said Manoj Gupta, Managing Director of LIOC.

When IOC first entered Sri Lanka in 2003 as LIOC for retail operations, it also got the lease for a portion of the Trincomalee storage called the Lower Tank Farm.

The tanks are being refurbished for three commercial activities – supply of petrol and diesel across the country; to store petroleum products; and to offer bunkering facilities.

It has since refurbished the 14 tanks in it, and uses them to supply petrol and diesel across Sri Lanka. Tankers are filled at the terminal and head out to LIOC-operated petrol pumps in Colombo and elsewhere. A lubricant blending tank is in operation at the Lower Tank Farm. LIOC also uses its setup to provide bunkering or mid-sea refuelling from Trincomalee.

The new agreement is for the 85 tanks, each with a capacity of 10,000 metric tonnes (MT), in the Upper Tank Farm. The 1932 British-built storage, located next to the harbour, was used by the Allies during the Second World War and for some years after, but has been in disuse at least for six decades. Tall trees and dense foliage cover the entire area. In 1987, the Indian Peace Keeping Force camped in some parts of it.

Gupta said TPTL plans to restore 10 tanks in the first phase. While waiting for the project feasibility report, clearing work will begin on the site, he said, after the Trincomalee divisional commissioner gives due permissions for cutting the trees in the area.

The Sri Lankan government has been blasted in the local media, not just for the Trincomalee oil tank farm deal, but also the solar farm in nearby and other renewable energy projects in northern Sri Lanka.

Some sections in Sri Lanka have deep-seated reservations about the agreement, believing that India forced Sri Lanka to surrender a strategic asset to India in exchange for its $ 2.4 bn financial assistance over the last three months.

Former High Commissioner to India, Austin Fernando, said the lack of transparency about these agreements made them easy targets for criticism.

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NATION

SC UNDERSCORES NEED FOR A HOLISTIC PICTURE OF CONVICTS FACING DEATH PENALTY

A man condemned to death for the brutal gang rape of a seven-year-old girl in Madhya Pradesh has turned the spotlight on a question that has haunted trial judges — do they really know the person they send to the gallows?

For decades, sentencing hearings have covered only basic details such as the convict's immediate family structure, educational qualifications and work before the arrest. No effort was made to consider information pivotal for mitigation such as adverse childhood experiences, multi-generational history of physical and mental health issues, exposure to traumatic events and other familial, social and cultural factors crucial to undertaking an individualised sentencing enquiry.

In the present case of Irfan, alias Bhay Mevati, the trial court sentenced him to death just hours after it found him guilty of the gang rape in 2018.

It was a case in which the death penalty was awarded, though the child did not die. When the case came up in appeal, the Madhya Pradesh High Court reasoned that the death penalty was an effective deterrent in view of the alarming rise in sexual abuse of children.

However, a Supreme Court Bench, led by Justice U.U. Lalit, has taken on record extensive investigation undertaken by C.P. Shruthi, a "mitigation investigator" at Project 39A of the National Law University, Delhi.

Ms. Shruthi's interviews with a cross-section of people from Irfan's past — from his schoolteachers, friends and family members — revealed his early exposure to dire poverty, structural exclusion and work in an adult environment at a very young age. Her investigation brought to light the fact that Irfan had witnessed "multiple traumatic events in the immediate family and the community".

These details, which were not examined by the trial judge before sentencing Irfan to death, have led the Supreme Court to consider the role of mitigating investigators, who are professionals qualified in social work, sociology, anthropology, criminology, psychology and other social sciences, in uncovering mitigating circumstances which would help courts determine the punishment.

The court has sought the assistance of Attorney-General K.K. Venugopal and appointed senior advocate Siddharth Dave and advocate K. Parameshwar amici curiae in the case.

"Every circumstance which has the potential of being a mitigating circumstance, while considering whether death sentence be imposed or not, must necessarily be considered by the court," Justice Lalit, heading a three-judge Bench, noted in the order.

Though death is seen as a fit punishment in only the rarest of the rare cases, even in those cases, the courts should be well informed about the person they are considering sentencing to death.

'Unhindered access'

Highlighting the vital part a mitigation investigator could play in the cause of fair justice, the Bench observed that if a competent person was given unhindered access to interview an accused facing

the death penalty, even at the beginning of the trial, a "comprehensive analysis can then be projected at a stage when the matter is considered from the standpoint whether death sentence be imposed or not".

In fact, Irfan's lawyer, advocate Irshad Hanif, had approached the Supreme Court after the Central Jail authorities in Ujjain refused Ms. Shruthi permission to interview Irfan, saying only "legal advisers" were allowed to meet condemned prisoners.

The top court ordered the prison officials to allow her to talk to the condemned man away from their earshot.

"While the state has unhindered access to the accused within their custody, effective and meaningful access for the defence to collect mitigation material by meeting their client is restricted by the state," advocate Hanif argued.

In a separate note to the Supreme Court, Mr. Hanif wrote that mitigatory factors were not meant to justify the offence. Instead, they draw a complete picture of the prisoner, which are not limited to pre-natal details, formative years, developmental history, educational history, occupational history, trauma, access to nutrition, shelter, care, inter-generational history of physical and mental health and so on. It would also encompass the prisoner's conduct in jail, appreciation of the wrongfulness of his act, cognition, emotional and psychological state.

He referred to the Supreme Court's judgment in the Bachan Singh case that courts should not only consider the particular crime but also the circumstances of the criminal.

WHAT ARE THE SUPREME COURT'S ORDERS TO TAMIL NADU AND KERALA ON THE SUPERVISORY COMMITTEE?

The story so far: On April 8, the Supreme Court ordered the reconstitution of the Mullaperiyar dam's supervisory committee, which will include one technical expert each from Tamil Nadu and Kerala (the two States involved in the dispute concerning safety of the dam), and empowered the panel with functions and powers on par with those of the National Dam Safety Authority (NDSA), a body envisaged under the Dam Safety Act, 2021.

What is the dispute?

Located in Idukki district of Kerala, the 126-year-old Mullaperiyar dam is owned, operated and maintained by Tamil Nadu for several purposes, including irrigation, drinking water supply and hydro-power generation. In late 1979, after the eruption of the controversy over the structural stability of the dam, it was decided at a tripartite meeting that the water level be lowered to 136 feet against the full reservoir level of 152 feet so that Tamil Nadu could take up strengthening measures. In view of execution of a large portion of the measures, the Supreme Court, in 2006 and 2014, held that the water level be raised to 142 feet, up to which Tamil Nadu stored water even last year. The court's judgment of 2014 also provided for the formation of the supervisory committee and the completion of the remaining work by Tamil Nadu. But, there has been no end to litigation over the dam with Kerala witnessing landslides in recent years. Though there had been no reports of landslides in the vicinity of the dam site, the events in other parts of the State led to a renewed campaign against the dam. The Kerala government proposed that the existing dam be decommissioned and a fresh one be built, the options of which are not completely acceptable to Tamil Nadu which wants to complete the remaining strengthening work and restore the level to 152 feet.

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Why was the Dam Safety Act framed? How does it affect Mullaperiyar?

The Central government had mooted a bill on dam safety on account of the absence of a proper dam safety institutional framework. The Dam Safety Act, 2021, which came into force last December, deals with the subjects of surveillance, inspection, operation and maintenance of stipulated dams across the country, all of which hold relevance to the Mullaperiyar dam.

Broadly, the law, which holds dam owners responsible for the construction, operation, maintenance, and supervision of dams, has designed two sets of bodies, one at the level of the Union government and another at the level of States. The National Committee on Dam Safety (NCDS) would devise dam safety policies and recommend necessary regulations while the NDSA would implement policies and address unresolved issues between States, apart from being the regulatory body.

At the other level, the State Dam Safety Organisation and State Committees on Dam Safety have been envisaged. There is one more function attached to the NDSA, by which the NDSA would assume the role of a State Dam Safety Organisation for a dam located in one State and owned and operated by another. This is why Mullaperiyar comes under the law's purview.

What has the Supreme Court ruled?

Apart from vesting the supervisory committee with powers and functions of the NDSA, the court has empowered it to decide on all outstanding matters related to the safety of the dam and conduct a fresh review of its safety. For any act of failure, "appropriate action" will be taken against the persons concerned not only for having violated the directions of the court but also under the Act, which talks of one year imprisonment or fine or both for refusal to comply with directions of bodies formed under the law. As required by the Supreme Court in its latest order, the two States are expected to nominate, within two weeks, one representative each to the supervisory committee, in addition to one nominee each.

BOND IDENTITY

India's apex court will hear the petitions challenging the electoral bonds scheme. While this news should be welcomed, it is noteworthy that Chief Justice of India N V Ramana has not specified any specific date or set any timeline for arriving at a judgment. Two prominent non-governmental organisations (NGOs) in India — Common Cause and Association for Democratic Reforms (ADR) — have legally challenged the scheme that was started in 2018. They, along with several other critics, have been alleging that the introduction of electoral bonds is "distorting democracy" in India. Given the increasingly polarised nature of India's polity, it is of utmost importance that the Supreme Court either removes all doubts about the validity of the scheme or orders the government to make the necessary changes.

The electoral bonds scheme was first mentioned in 2017 when then Finance Minister Arun Jaitley presented it as a way to reform electoral funding in the country. Until then, most political parties used to bypass scrutiny of their finances by claiming that they received most of their donations in cash. Further, since cash amounts less than Rs 20,000 were exempted from scrutiny, parties routinely claimed that most of the donations they received were in cash and in amounts less than Rs 20,000. This opened channels for black money to flow into political parties. So Jaitley capped cash donations at Rs 2,000 and introduced electoral bonds, which could only be bought either by

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cheque or a digital transfer. These steps, it was assumed, would ensure that black money was not used to fund elections.

However, in actual practice, the electoral bonds scheme has left a lot to be desired. For one, it has not improved transparency in electoral funding. Worse still, it is being argued that this scheme has rigged the game in favour of the ruling party. That's because while a donor's identity is hidden from the public view, it is possible for the ruling party to know since these bonds are issued by a government-owned bank (State Bank of India). This advantage with the ruling party allows the possibility for the government of the day to either extort money or victimise those individuals/ entities that fund the Opposition. The fact that the BJP has cornered more than 75 per cent of all such bonds issued to date gives credence to this criticism. Another key area of concern is that the government, as part of the introduction of the electoral bonds, had removed the cap on how much money a company could donate. A quick closure in these matters is necessary to ensure transparency in campaign financing, critical to the integrity of the electoral process.

THE PROCESS OF ELECTING INDIA'S PRESIDENT

The story so far: The tenure of the current President of India Ram Nath Kovind is set to end in July this year, which is also when the 16th Indian Presidential election will be held to elect his successor. The Assembly elections held in five States this year, and the changes in the National Democratic Alliance (NDA), are expected to alter the dynamic of votes in the upcoming presidential race.

How is the President elected?

The Indian President is elected through an electoral college system, wherein the votes are cast by national and State-level lawmakers. The elections are conducted and overseen by the Election Commission (EC) of India.

The electoral college is made up of all the elected members of the Upper and Lower Houses of Parliament (Rajya Sabha and Lok Sabha MPs), and the elected members of the Legislative Assemblies of States and Union Territories (MLAs). This means, in the upcoming polls, the number of electors will be 4,896 — 543 Lok Sabha MPs, 233 MPs of the Rajya Sabha, and 4,120 MLAs of all States, including the National Capital Territory (NCT) of Delhi and Union Territory of Puducherry.

Before the voting, comes the nomination stage, where the candidate intending to stand in the election, files the nomination along with a signed list of 50 proposers and 50 seconders. These proposers and seconders can be anyone from the total of 4,896 members of the electoral college from the State and national level. The rule for securing 50 proposers and seconders was implemented when the EC noticed, in 1974, that several candidates, many without even a bleak chance of winning, would file their nominations to contest the polls. An elector cannot propose or second the nomination of more than one candidate.

What is the value of each vote and how is it calculated?

A vote cast by each MP or MLA is not calculated as one vote. There is a larger vote value attached to it.

The fixed value of each vote by an MP of the Rajya Sabha and the Lok Sabha is 708. Meanwhile, the vote value of each MLA differs from State to State based on a calculation that factors in its population vis-a-vis the number of members in its legislative Assembly. As per the Constitution

(Eighty-fourth Amendment) Act 2001, currently, the population of States is taken from the figures of the 1971 Census. This will change when the figures of the Census taken after the year 2026 are published.

The value of each MLA's vote is determined by dividing the population of the State by the number of MLAs in its legislative Assembly, and the quotient achieved is further divided by 1000. Uttar Pradesh for instance, has the highest vote value for each of its MLAs, at 208. The value of one MLA's vote in Maharashtra is 175, while that in Arunachal Pradesh is just 8. The total votes of each Legislative Assembly are calculated by multiplying the vote value of each MLA by the number of MLAs.

Finally, based on these values, the total number of votes of all Rajya Sabha and Lok Sabha MPs would be 5,59,408 (776 MPs X 708), and the total votes of all MLAs from State Legislative Assemblies would come up to 5,49,495. Thus, the grand total vote value of the whole electoral college comes up to 10,98,903.

What is required to secure a victory?

A nominated candidate does not secure victory based on a simple majority but through a system of bagging a specific quota of votes. While counting, the EC totals up all the valid votes cast by the electoral college through paper ballots and to win, the candidate must secure 50% of the total votes cast + 1.

Unlike general elections, where electors vote for a single party's candidate, the voters of the electoral college write the names of candidates on the ballot paper in the order of preference.

What can be expected in the upcoming presidential polls?

Vice-President Venkaiah Naidu is reportedly the frontrunner for the presidential race nominated by the ruling NDA, unless a second term ticket is given to Mr. Kovind. Meanwhile, Opposition parties are contemplating jointly putting up a candidate for the race. As per data after the Assembly elections held in five States —U.P., Uttarakhand, Punjab, Manipur, and Goa, the BJP-led NDA alliance can secure a total vote value of 5,39,827 if all its MPs and MLAs cast their vote.

This is still around 9,625 votes short of the halfway mark. It is important to note, however, that victory will be calculated based on those who actually cast their votes this time; their vote value will then be divided by 50, with the number one being added to the figure. In the Upper and Lower houses of Parliament, if all NDA MPs cast their vote in favour of its nominated candidate, it can secure a vote value of 3,23,556, and this number in the case of all NDA MLAs voting is 2,16,271.

Things have changed for the NDA from the 2017 Presidential polls.

In Maharashtra, which has a high total vote value of 50,400; the BJP is no longer allied with the Shiv Sena, which supported the NDA candidate in 2017. The NDA now has a vote value of 19,775 from Maharashtra's total. In Punjab, the Shiromani Akali Dal (SAD) broke away from the BJP-led alliance over the farmers' agitation issue. Punjab has a total vote value of 13,572, of which the NDA's vote value comes up only to 464. In this year's Assembly polls in Punjab, the BJP did not win any more than the two seats it already had.

After the recent U.P. Assembly election, the NDA's tally of MLAs in the State Legislative Assembly went up to 273, which if multiplied by the value of each member's vote (208), comes up to 56,684, which is more than half the total value of all U.P. MLAs.

Meanwhile, despite winning in Uttarakhand, Goa and Manipur, the tally of seats won by the BJP came down in all three States compared to the previous presidential election.

This article is written taking into consideration all the Assemblies in the country. However, as J&K Assembly is not eligible to vote and only Delhi and Puducherry UTs can (as of now) vote in the presidential elections, the figures might slightly vary.

BRANDED A CRIMINAL FOR FOLLOWING CUSTOM

The Nilgiris district of Tamil Nadu has a substantial tribal population. Tribal communities in the region include the Todas, Kotas, Irulas, Paniyas, Kattunayakas, and Kurumbas, each with distinct practices, cultures, and ceremonies. Tribal people practise customs that "civilised" society finds difficult to accept. Child marriage, for instance, is common in some of these communities. There are ceremonies attached to each practice, sanctified by religion. Due to the conflict between some of these traditional practices and the law of the land, tribal people often unwittingly end up in jail.

Customs and laws

The Protection of Children from Sexual Offences (POCSO) Act is a landmark legislation, enacted in 2012, to protect children from sexual offences. One provision in the law mandates hospitals to report to the jurisdictional police station when girls below 18 years of age are admitted for delivery. On receipt of such reports, police authorities are mandated to register an FIR against the person responsible for the pregnancy. This provision clearly intends to punish males who have forced sexual intercourse with girls below 18 years of age. However, the law fails to make room for consensual relationships or validated marriages in some communities. Most tribal people do not keep records of their date of birth. Most of them marry when they come of age and usually have children before they reach the legal age of marriage. As a result, tribal boys are arrested and prosecuted.

Hindu laws are the products of the unification and codification of the customs of a majority of people who follow Hinduism, but they are not inclusive or universal. The law recognises that there are customs and traditions followed by different groups of people, beyond what is codified, and provides that they are equally legal. India is a diverse nation and it is difficult, even improbable, to have a uniform law for the whole country.

Tribal communities in India follow diverse practices, some of which are for survival and adaptation. For example, polyandry is practised by the Gallongs of Arunachal Pradesh, where the brothers of a family who cannot afford a high bride price marry the same woman. This gives them an economic advantage. Similarly, it is natural and logical for tribal communities with a lower life expectancy to marry before they are 18 years old. To treat those who engage in such practices as criminals is to be averse to the tenets of social justice enshrined in our Constitution.

Many tribal communities in the Nilgiris usually get girls married off early, that is, when their daughters attain puberty. Many tribal people are hardly aware of the existence of a law, or the age of majority, or the legal age for marriage. This being the case, arresting the husbands of girls who have happily welcomed the arrival of a baby is cruel. Till date, about 50 such criminal cases have been filed against tribal youth in Nilgiris district. Tribal women are mostly self-sufficient; it is only in recent times that they have started to utilise medical services. If there are unfortunate incidents of prosecution, they may be discouraged to seek proper medical care.

Codified Hindu laws provide statutory recognition to the customs of Hindus, while also equally recognising customs not dealt with thereunder. Polyandry, child marriage and divorce among tribal communities, practised by them in their own unique ways, are recognised as customs. By being placed on the same pedestal as mainstream custom, polyandry cannot be treated as adultery, nor can child marriage be punished using a standard that the tribal people do not relate to.

The hardships faced by the tribal youth who are arrested under the POCSO Act are manifold. The youth are remanded to judicial custody often without even knowing why they are being arrested. Bail is granted almost two weeks after their arrest, which means they are incarcerated as undertrials. Legal assistance is often beyond their reach. This detention, which is beyond their comprehension, is sometimes viewed by them as ill luck brought by the newborn, leading to the abandonment of the child and a breakdown of marital life. Custodial interrogation in these cases is unnecessary and should not be adopted as routine practice. If at all, police authorities can issue notice under Section 41A of the Code of Criminal Procedure and ask the person charged to appear before them for interrogation instead of arresting and remanding him.

At the outset, while child marriages must be dissuaded, a blanket and rigid law that fails to address multiple factors such as tribal customs, religious validation, adolescent consent and elopement, and criminalises males who engage in sexual intercourse with consenting females, cannot be the solution. The Madras High Court recently quashed cases under the POCSO Act against teenagers for elopement. It held that the Act cannot be invoked in such cases. In Arnab Manoranjan Goswami v. The State of Maharashtra (2020), the Supreme Court reiterated that the basic rule of criminal justice system is 'bail' and not 'jail' and urged the High Courts and District Courts to enforce this principle. Prosecution cannot be made the norm in child marriage cases, especially when the act is valid in the eyes of personal custom that a person subscribes to.

Child marriages solemnised in violation of upper age limits are voidable under the Prohibition of Child Marriage Act, 2006. After the couple reaches the eligible age, the marriage is ratified and legalised. Criminal cases registered under the POCSO Act against tribal boys eventually end in acquittal for want of evidence or because of compromise. So, no purpose is served with these arrests.

Tribal populations have made substantial headway in education thanks to a targeted campaign to create awareness. Such tools can be employed in the implementation of the POCSO Act. The tribal communities of Wayanad district in Kerala face similar issues as those in the Nilgiris. In response, the District Legal Services Authority of Kerala created a short film, Incha, in the Paniya language to educate the people about the POCSO Act when more than 250 cases were registered against tribal men who had married girls under the age of 18. However, how far a blanket law can make incursions into the cultural practices of a tribal group remains a question.

A provision intended to protect children from sexual abuses/offences is threatening the lifestyle of certain people to whom this country promises social justice. To be branded a criminal for following cultural practices and to be stripped of dignity is cruel. A law that seeks to protect a vulnerable group should not be allowed to strip yet another vulnerable and marginalised group of its rights and practices. India is a nation of diversity and has always managed to balance the interests of diverse groups to ensure democracy and equality to all. An amendment to the POCSO Act is required so that we continue celebrating the cultural chaos that we call our country. After all, law is for its people.

AMENDING THE WEAPONS OF MASS DESTRUCTION ACT

The story so far: On April 5, 2022, the Weapons of Mass Destruction (WMD) and their Delivery Systems (Prohibition of Unlawful Activities) Amendment Bill, 2022 was introduced in the Lok Sabha. It was passed the next day. The Bill amends the WMD and their Delivery Systems (Prohibition of Unlawful Activities) Act, 2005 which prohibits the unlawful manufacture, transport, or transfer of WMD (chemical, biological and nuclear weapons) and their means of delivery. It is popularly referred to as the WMD Act. The recent amendment extends the scope of banned activities to include financing of already prohibited activities.

What was the purpose of the original WMD Act?

The WMD and their Delivery Systems (Prohibition of Unlawful Activities) Act came into being in July 2005. Its primary objective was to provide an integrated and overarching legislation on prohibiting unlawful activities in relation to all three types of WMD, their delivery systems and related materials, equipment and technologies. It instituted penalties for contravention of these provisions such as imprisonment for a term not less than five years (extendable for life) as well as fines. The Act was passed to meet an international obligation enforced by the UN Security Council Resolution (UNSCR) 1540 of 2004.

What is the UNSCR 1540?

In April 2004 the UN Security Council adopted resolution 1540 to address the growing threat of non-state actors gaining access to WMD material, equipment or technology to undertake acts of terrorism. In order to address this challenge to international peace and security, UNSCR 1540 established binding obligations on all UN member states under Chapter VII of the UN Charter. Nations were mandated to take and enforce effective measures against proliferation of WMD, their means of delivery and related materials to non-state actors.

UNSCR 1540 enforced three primary obligations upon nation states — to not provide any form of support to non-state actors seeking to acquire WMD, related materials, or their means of delivery; to adopt and enforce laws criminalising the possession and acquisition of such items by non-state actors; to adopt and enforce domestic controls over relevant materials, in order to prevent their proliferation. It was to meet these obligations that enactment and enforcement of legislations to punish the unlawful and unauthorised manufacture, acquisition, possession, development and transport of WMD became necessary.

What has the Amendment added to the existing Act?

The Amendment expands the scope to include prohibition of financing of any activity related to WMD and their delivery systems. To prevent such financing, the Central government shall have the power to freeze, seize or attach funds, financial assets, or economic resources of suspected individuals (whether owned, held, or controlled directly or indirectly). It also prohibits persons from making finances or related services available for other persons indulging in such activity.

Why was this Amendment necessary?

UNSCR 1540 undergoes periodic reviews to determine the success of its implementation and to identify gaps in enforcement. In one such review undertaken in 2016, it was concluded that the risk of proliferation to non-state actors is increasing due to rapid advances in science, technology, and international commerce.

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The statement of objects and reasons of the Bill presented in India echoes these developments for having made the Amendment necessary. Two specific gaps are being addressed — first, as the relevant organisations at the international level, such as the Financial Action Task Force have expanded the scope of targeted financial sanctions and demand tighter controls on the financing of WMD activities, India's own legislation has been harmonised to align with international benchmarks.

Secondly, with advancements in technologies, new kinds of threats have emerged that were not sufficiently catered for in the existing legislation. These notably include developments in the field of drones or unauthorised work in biomedical labs that could maliciously be used for terrorist activity. Therefore, the Amendment keeps pace with evolving threats. In fact, domestic legislations and international measures that address issues of WMD security cannot afford to become fossilised. They must be agile and amenable to modifications in keeping with the changing tactics of non-state actors.

What more should India do?

India's responsible behaviour and actions on non-proliferation are well recognised. It has a strong statutory national export control system and is committed to preventing proliferation of WMD. This includes transit and trans-shipment controls, retransfer control, technology transfer controls, brokering controls and end-use based controls. Every time India takes additional steps to fulfil new obligations, it must showcase its legislative, regulatory and enforcement frameworks to the international community.

At the domestic level, this Amendment will have to be enforced through proper outreach measures to industry and other stakeholders to make them realise their obligations under the new provisions. India's outreach efforts with respect to the WMD Act have straddled both region-specific and sector-specific issues. Similar efforts will be necessary to explain the new aspects of the law.

It is also necessary that India keeps WMD security in international focus. There is no room for complacency. Even countries which do not have WMD technology have to be sensitised to their role in the control framework to prevent weak links in the global control system. India can offer help to other countries on developing national legislation, institutions and regulatory framework through the IAEA (International Atomic Energy Agency) or on bilateral basis.

Could the Amendment become troublesome to people on account of mistaken identity?

In the discussion on the Bill in Parliament, some members expressed concern on whether the new legislation could make existing business entities or people in the specific sector susceptible to a case of mistaken identity. The External Affairs Minister, S. Jaishankar, however, assured the House that such chances were minimal since identification of concerned individuals/entities would be based on a long list of specifics.

What is the international significance of these legislation? What is in it for India?

Preventing acts of terrorism that involve WMD or their delivery systems requires building a network of national and international measures in which all nation states are equally invested. Such actions are necessary to strengthen global enforcement of standards relating to the export of sensitive items and to prohibit even the financing of such activities to ensure that non-state actors, including terrorist and black-market networks, do not gain access to such materials.

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Sharing of best practices on legislations and their implementation can enable harmonisation of global WMD controls.

India initially had reservations on enacting laws mandated by the UNSCR. This is not seen by India as an appropriate body for making such a demand. However, given the danger of WMD terrorism that India faces in view of the difficult neighbourhood that it inhabits, the country supported the Resolution and has fulfilled its requirements.

It is in India's interest to facilitate highest controls at the international level and adopt them at the domestic level. Having now updated its own legislation, India can demand the same of others, especially from those in its neighbourhood that have a history of proliferation and of supporting terrorist organisations.

OVERDUE

After being booked by the Udupi Town police in a case relating to abetment to suicide of a contractor, the continuation of Karnataka's Rural Development and Panchayat Raj Minister K.S. Eshwarappa in his post was untenable. The contractor, Santosh Patil, had alleged that he and other contractors had taken up some work for a temple fair in Belagavi district after the Minister had asked some gram panchayat members to proceed with the project and that the Minister's aides had demanded a commission of 40% when approached for payment of the bills. While Mr. Eshwarappa has denied this, citing the lack of work orders as evidence, the allegations that were made by the deceased contractor are in line with what the Karnataka State Contractors' Association (KSCA) has been suggesting: an "unprecedented 40% kickbacks" in State government contracts and also several complaints against Mr Eshwarappa in particular, and other Ministers and MLAs in the State. These allegations are not new either. In July 2021, in a letter to the Prime Minister, the association had made the same point — that government machinery led by the Bharatiya Janata Party (BJP) was extracting kickbacks of up to 40% for government contracts and the clearance of contractor bills, and that the rot was systemic, including elected representatives and the bureaucracy. There was a change of guard in the government (a new Chief Minister) after these allegations were made and this was followed by an announcement of committees headed by retired judges being formed to probe tender estimates and conditions. But if the KSCA's views are accurate, little seems to have changed on the ground.

It is also evident that kickbacks have been a systemic political problem considering that the KSCA's concern was about the high rate of commissions rather than just the existence of these kickbacks to grease an official's palm. But the brazenness of the bribery and commission demands by those in power is there for all to see. This should not surprise anyone again as the BJP managed to gain power by weaning away legislators from other parties and the new recruits to power would not have had the incentive to shift but for lucrative gains. If anything, the BJP and the Sangh Parivar affiliates in the State have sought — and rather successfully — to distract people from the issue of corruption by raking up communal issues which in turn have affected public order. But the death of Patil and the resignation of Mr. Eshwarappa have been a jolt to the ruling party. The developments have brought the focus back on corruption and poor governance, which should be a blight on the State that hosts India's own version of the Silicon Valley and is a key engine in India's economic growth.

SKIRMISHES AFFECT BUSINESSES

Even as Karnataka has set itself an ambitious target to contribute 50% to the country's total IT business, expected to reach $350 billion in 2026 as per Nasscom, and to take its bio-economy to $50 billion by 2025, the State has attracted some unwanted global attention due to communal disturbances, with the government seen as doing too little to stem them.

Known as India's Silicon Valley, Bengaluru is a melting pot of cultures and has one of the largest tech talent pools in India. This brand value is perceived as getting dented owing to the recent communal skirmishes.

Alarmed by the controversies about wearing hijabs in classrooms, the sale of halal meat, and the drive to evict Muslim traders from temple premises, and their possible impact on Karnataka's global standing in business and technology, Biocon Chairperson Kiran Mazumdar-Shaw called on Chief Minister Basavaraj Bommai to "resolve the growing religious divide". Tagging the Chief Minister, Ms. Shaw tweeted, "Karnataka had always forged inclusive economic development... If ITBT became communal, it would destroy our global leadership". Though others from the tech and business community have not been as open, many have similar concerns and lament that the ruling dispensation has no grip on the situation. This, they feel, could seriously erode the State's image if the situation is not controlled. Many say that Karnataka's IT sector, though well incentivised, grew with minimal intervention of the political class over the last three decades and it cannot be "sacrificed" at the altar of vote bank politics.

While Mr. Bommai responded to Ms. Shaw's tweet saying things could be resolved through dialogue, the national convener of the IT cell of the BJP, Amit Malviya, called Ms. Shaw's tweet a "personal, politically coloured opinion" which was "conflated... with India's leadership in the ITBT sector." Soon after, Tamil Nadu Finance Minister Palanivel Thiagarajan said his government would welcome companies who want to leave Karnataka due to the rising communal tensions there.

These developments came within days of a startup founder, Ravish Naresh, expressing disenchantment on Twitter about Bengaluru's crumbling public infrastructure. Telangana's IT Minister K. Taraka Rama Rao responded to that tweet by publicly courting the startups of Karnataka. He said that Hyderabad would offer better infrastructure and a better social and physical environment than Bengaluru.

Industry observers feel that a myopic political and communal worldview in Karnataka could cost the State businesses and industries at a time when the world is trying to be less dependent on Chinese merchandise. Though no MNC has flagged the issues of prejudice and polarisation so far, many of them may weigh their options if things are allowed to go out of control.

The government has responded to these developments saying Bengaluru and Karnataka's standing cannot be shaken by these incidents or by the invitations by other States. Mr. Bommai said Karnataka cannot be compared with any other State and invitations by other States only show their "desperation." Karnataka's IT Minister C.N. Ashwath Narayan said Karnataka's brand image cannot be judged by its roads alone and the State is ahead of other States in Foreign Direct Investment, which is proof of its firm standing. While this confidence may not be unfounded, it is beyond dispute that the law-and-order situation of any State is closely linked to its business ecosystem. Karnataka is a magnet for tech companies and startups for many reasons, but one of the key reasons is that it is known as a peaceful State and Bengaluru enjoys the image of being the world's fastest growing tech hub.

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COLLECTIVE PUNISHMENT

The rule of law has a new interpretation in Madhya Pradesh: it is whatever is done by the rulers, and requires neither law nor process. The demolition of about 45 pieces of property, both houses and shops, allegedly belonging to "rioters" at Khargone, a day after a procession to mark Ram Navami, does not appear to be based on any law. It is undoubtedly an instance of collective punishment for the alleged acts of a few. There is little doubt that it was a state-backed drive aimed at Muslims. The basis for the action is the allegation that the Hindu procession was targeted by stones as it passed through a lane adjacent to a mosque. An official spin is sought to be given to the demolition drive that these were "encroachments" and were removed under existing rules. However, the zeal shown in bringing in bulldozers a day after violence marred the Ram Navami procession indicates that punishing those suspected of involvement was the main motivating factor. Chief Minister Shivraj Singh Chouhan has warned that rioters would not be spared and that action would not be limited to arrests, but would extend to recovery of damages from property owned by them. The legal basis is possibly a 2009 order of the Supreme Court, permitting the pinning of the blame on organisers of an event if it ends in violence, and recovering compensation from them against claims. However, even that was allowed only after their involvement in the violence was proved, an element clearly absent here.

Hindutva outfits have been, for some time now, targeting Muslim businesses with calls for boycott and dissemination of rumours about their practices. In the backdrop of an upsurge in calls for violence against Muslims, some with a genocidal tenor, there is reason to believe that there is a larger agenda behind the various incidents of communal colour taking place. The objective seems to be to provoke some sort of retaliation so that they can be portrayed as culprits and severe punishment, both legal and extra-legal, meted out. The 'othering' of Muslims is no more discreet, but is being actively promoted in public and shared through social media. In some disturbing visuals, men appearing to be saffron-robed monks are seen handing out death and rape threats. The sight of crowds dancing with raised swords and saffron flags outside mosques, even as obscene slogans and provocative songs are being played, has become a defining visual in the Hindutva project. The country should not be allowed to be driven towards an atmosphere of communal tension with the tacit support of the government machinery in several States.

THE FATE OF CINEMA IN A POLARISED WORLD

Given today's atmosphere in the country, if films drive political narratives they will end up splitting audiences into groups. The anguish and anger of audiences to art often make the daily challenge of keeping our secular fabric intact tough.

Movies chronicle and reflect the state of a nation. For instance, Nandita Das's Firaaq captures the fear and disturbance that overcame Gujarat during the Godhra carnage. Rahul Dholakia's Parzania was based on a true story of a Parsi boy who went missing after the 2002 Gulbarg Society massacre. Amu by Shonali Bose explored the dynamics of religious intolerance against the Sikhs during the anti-Sikh riots of 1984.

We need films that allay and heal wounds and not make citizens intolerant.

Mumbai-based gay rights activist Vivek Anand went to watch The Kashmir Files because he is interested in history. Like many others across the country, he was curious to know the story of Kashmiri Pandits.

For someone growing up in the city of dreams in good neighbourliness and caring for the marginalised, a movie is about entertainment with a social responsibility. But unease gripped Anand more than the film's impact on him because peoples' reaction inside the auditorium, he says, "was an evolution in audience response."

Having watched controversial films in the past, Anand says he was shocked at the hysteria generated by TheKashmir Files. "People got up to give hate speeches, raised slogans of Bharat Mata ki Jai and Vande Mataram," he says and adds, "the statements made were not just ordinary reactions from people; it reflected the mood of the country."

Should art be reactive?

The anguish and anger of audiences to art often make the daily challenge of keeping our secular fabric intact tough. Actor Adil Hussain's tweet in a general context that "art should not be reactive" is significant because people would want the experience of watching a movie to be meaningful and not harming.

It is one thing to see the naked truth on screen but another to witness a roller-coaster of public emotions post-screening. When Anand says the aftermath of The Kashmir Files screening reminded him of the Bombay riots post-Babri masjid demolition as it "divided peoples' lives into pre and post 1992 phase", it affirms how polarisation happens in and through films. Back from the theatre that evening, he told his friends that for the first time he felt scared inside an auditorium after the film got over. "I witnessed normalisation of hate politics," he wrote.

Glorification in a movie usually ends in applause while a tragedy tears you up and we tend to leave it there. "But when people start resonating and engaging in a mob-like manner, it incites violence and makes it murky," says Delhi-based psychologist Shraddha Kapoor, who teaches at Lady Irwin College. "When a film's narrative moves us, we should turn melancholic, not point accusing fingers," she notes.

Good films do shape our minds but should movies decide our behaviour? Given today's atmosphere in the country, if films drive political narratives, they will end up splitting audiences into groups. The anti-Muslim agenda is a polarising national issue now and when the ruling party throws its weight behind a movie, it is like an automatic promotion of an agenda. It could actually turn off half of the people they are trying to convince and simultaneously also help reduce any controversy with the propaganda.

Filmmakers do try to keep their political inclinations subtle but an endorsement of their commitment to the political agenda does not always remain so. So is the case with the director of The Kashmir Files, Vivek Agnihotri, who also made The Tashkent Files (2019), as an investigative cinema attempting to crack the mystery of the death of India's second Prime Minister Lal Bahadur Shastri. The film came across as a vituperative majoritarian theory; how a strong leader alone can unleash military defeat on the enemy.

Several jingoistic films playing on the nationalistic fervour have been released in the last few years. The threat from a known enemy (read Pakistan) and the use of a powerful set of dictated nationalist emotions in Uri: The Surgical Strike lent to erasing the usual rational thinking. Instead of just positive cheerleading, the movie's most famous one-liner — How is the josh — also pervaded a collective vicarious mentality.

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Films of trauma and violence

Strident opinions and heightened appreciation for films such as Manikarnika: The Queen of Jhansi, Tanhaji and Kesari can take audiences out of their comfort zones . "In The Kashmir Files, I saw a compilation of narratives which are true; I have grown up hearing such stories," says life-skills counsellor, Pearl Fotedar, related to former Congress leader M. L. Fotedar. "Everyone's perception of the movie is different; It has initiated a topic that did not find space for three decades. But, emotions triggered by the movie need to be channelised positively and not politically if welfare of Kashmiri Pandits is a genuine cause at heart," she says.

Movies chronicle and reflect the state of the nation.

For instance, Nandita Das's directorial debut Firaaq set over a 24-hour period and one month after the Godhra carnage, captures the fear and disturbance that overcame Gujarat. The 2009 film does not flinch while examining the lingering trauma of people affected in the Gujarat riots that left over a 1,000 dead.

Rahul Dholakia's Parzania was based on a true story of a Parsi boy who went missing after the 2002 Gulbarg Society massacre. It traces the struggles of the family searching for their boy. The 2007 film was not released in Gujarat as the cinema owners cited it as a sensitive film to be screened.

The 2005 release, Amu by Shonali Bose explored the dynamics of religious intolerance against the Sikhs during the anti-Sikh riots of 1984. It gives a glimpse into how the massacre was supported, encouraged and executed. Haider (2014) questioned the tyrannical power of the controversial AFSPA law. But the kind of outrage, a section of the audience of The Kashmir Files is spewing did not happen in the case of earlier films.

We do need hard hitting films about real issues but not distorting of expectations that make citizens behave like mobs and contribute to polarisation.

We need films that allay wounds and not nudge citizens to become part of the process of 'othering' the minority when the environment is already so communally intolerant in the country.

THE REAL SCRIPT BEHIND THE CALL FOR A HINDI-INDIA

Some 2,000 years ago, Tholkappiyar, the fabled author of Tolkappiyam, said that poetic words can be distributed in four types: Lyarcol, Thirisol, Thisaiccol and Vadasol. Of these, he held, 'Vadasol', words from northern languages, "become fit to be used in Tamil only when they adopt Tamil phonetics discarding their northern phonetics".

From ancient times, a sensitivity to language difference has almost been the core of Dravidic self-hood. A similar sensitivity existed among the speakers of Prakrits in ancient times. It was in one of the Prakrits that Mahavir had presented his teachings in the sixth century BCE. Eighteen centuries later, Acharya Hemachandra, a major Jain scholar, poet, mathematician and philosopher, produced his Desinamamala, a treatise on the importance of Prakrit words used in Gujarat of his times as against those from Sanskrit. In the process, he gave a tangible form to the Gujarati language. Mahatma Gandhi, who defined the idea of selfhood for India in Hind Swaraj (1909), chose to write this iconic book in Gujarati. So, language sensitivity has been a feature of selfhood in the case of every Indian language.

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Clarity in the Constitution

It would be unreasonable to expect a contemporary Indian to know about a 2,000-year-old Tolkappiyam or a nine-century-old Desinamamala. But would it be too much to expect the person to know about the Constitution adopted by the republic seven decades ago? The Constitution states two things with utmost clarity. One, India, is 'a union of states'; and two, the official language used for communication between the States shall be the language that has been in use at the time of adoption of the Constitution. The move from English to Hindi can take place only if, as the language related Articles unambiguously state, 'two or more states agree' for the shift. Article 344 (4) provides for a 'Committee consisting of thirty members', 'twenty' from the Parliament and 'ten' from State assemblies, for safeguarding language related provisions.

The functions and the scope of the committee, as laid down by the Constitution, are further clarified by the practice of distribution of language as a subject between two Ministries, the Human Resource Development (HRD) Ministry and the Home Ministry. The scope of the HRD Ministry with reference to language extends to education and the promotion of cultural expression. The Home Ministry's scope extends to safeguarding relations of the States with the 'union', protecting the linguistic rights of language minorities and the promotion of Hindi. The last of these, the Constitution states, has to be 'without interference with other languages'.

Data on language decline

There are two crucial questions for the Home Ministry and its Hindi Language Committee which should be understood correctly in light of the provisions of the Constitution: 'Has Hindi seen any growth during the last seven decades? And, if there is such a growth, does it interfere with the growth of other Scheduled languages?"

There is quite a story to tell using the data from the Census. In 2011, Hindi speakers accounted for 43.63% of the total population, with a total of 52.83 crore speakers. In 1971, the number was 20.27 crore, accounting for 36.99% of the total population. Between 2001 and 2011, the growth in proportion of the population was 2.6%. The next most spoken language, Bangla, — the first is Hindi — had negative growth. It was spoken by 8.30% of Indians in 1991, 8.11% in 2001 and by 8.03% in 2011. Telugu, which slid from 7.87% in 1991, to 7.19% in 2001 and 6.70% in 2011, has a similar story to tell.

It is no different for Marathi either: 7.45% (1991), 6.99% (2001) and 6.86% (2011). Tamil, the oldest surviving language in the country, should have received at least some attention from the Home Ministry. But the truth is that it is no different from that of Bangla, Telugu and Marathi. Tamil recorded 6.32% of the total population in 1991, 5.91% in 2001 and 5.70% in 2011. The only major language to show decadal growth (though small) was Gujarati. And the only small yet scheduled language to show good growth was Sanskrit. The 2021 Census, when conducted, will have another count of languages in the country. And for reasons that are too obvious, the situation of all languages in the Eighth Schedule — except Hindi and Sanskrit, and perhaps Gujarati — will have worsened. In this context, the Parliamentary Committee for the promotion of Hindi should have expressed its concern about the decline of Indian languages, except Hindi, and the lack of growth of Sanskrit, which has ceased to be a living language since the ninth century.

Hindi's growth is more fiction

If all other languages show a relative decline, why is Hindi recording steady growth? The 52.83 crore speakers of Hindi (as recorded in 2011) included not just the speaker of 'Hindi' but also

those of more than 50 other languages. Bhojpuri, which was claimed by more than five crore speakers, and evident in its growing visibility in its cinema, literature, newspapers, songs, theatre and publication industry, is placed within Hindi. Most languages of Himachal Pradesh, Uttarakhand, Chhattisgarh, Rajasthan and Jharkhand have also been pushed into the Hindi package. Even the Pawari language (spoken mainly in Maharashtra and in some parts of Madhya Pradesh) has been shown as 'Hindi', overlooking the fact that most Pawari speakers may find Hindi almost unintelligible.

Thus, the story of Hindi's growth is quite fictitious. Had the Census not included these other languages under Hindi, the strength of Hindi speakers would have gone down to about 39 crore, — just a little under 32% of the total population in 2011 — and would have looked not too different from those of other scheduled languages. The Committee should also have concerned itself with making the Census data for Hindi more realistic.

The data for English speakers is far more truthful. Census 2011 reports a total of 3,88,793 Indians as English speakers (2,59,678 men and 1,29,115 women). Compare this with the least spoken among the scheduled languages, i.e., Manipuri at 17.61 lakh speakers and Bodo at 14.82 lakh speakers. No further comment is necessary; there is nothing to be proud about these figures.

Other languages shine

Hindi is a beautiful language, as is the case with any small or big language in the world. Hindi cinema has brought India some fame and some foreign currency. Hindi literature is rich and evokes pride when mentioned. Yet, it is also true that among the languages included in the Eighth Schedule, it falls within the younger lot of languages.

On the other hand, Tamil, Kannada, Kashmiri, Marathi, Oriya, Sindhi, Nepali and Assamiya have a much longer/older history. As a language of knowledge too, Tamil, Kannada, Bangla and Marathi (with their abundance of encyclopaedias and historical literature), quite easily outshine Hindi. A language evolves slowly and cannot be forced to grow by issuing ordinances.

More politics, the economy

If all wisdom related to the history of Hindi, India's multilingualism, the federal structure of India and the issue of language sensitivity in so many States should have guided the Committee and the Official Language Committee to accept linguistic realism, what is it that prompted Home Minister Amit Shah to call for a Hindi-India all of a sudden? It is perhaps not so much the ideology of the Rashtriya Swayamsevak Sangh of hyphenating Hindi-Hindu nationalism that has prompted the Home Minister's Hindi assertion. It may also not be the Bharatiya Janata Party's idea of majoritarian democracy that has prompted it. Hindi speakers in the country, despite the inflated figure of 52 crore against 121 crore put out by the 2011 Census, do not form a linguistic majority.

The fact remains that 69 crore (even in the 2011 Census), were non-Hindi speakers. In that sense, it was not and cannot be the majority language of India. It is quite likely that Mr. Shah's attempt to stoke Hindi pride is required as a balm for the vast unemployment that hurts the youth in the Hindi belt, an area so crucial for the 2024 Lok Sabha election. Yet, the Home Minister has overlooked the fact that while harping on Pakistan being a threat to security works for Hindu mobilisation, depicting English as an anti-national entity will no longer work to mobilise the Hindi-speaking people. It makes for utterly poor economics and an absurd linguistics. Most of all, it makes for anti-federal politics. Does India need these?

LANGUAGE NO BAR

Union Home Minister Amit Shah's statement on making Hindi the language of communication for people of non-Hindi speaking areas or States was absolutely unnecessary. As the chairman of the Parliamentary Official Language Committee, he is duty bound to promote the spread of the Hindi language. But, the impression his speech generated at the 37th meeting of the panel in New Delhi last week is that he wanted to impose the language. Calling for the use of an Indian language among people who spoke languages other than Hindi, Mr. Shah said Hindi should be accepted as an alternative to English and not to local languages. It is up to the people of any two non-Hindi speaking areas or States to decide what their language of communication should be. If they are comfortable with English, which is also a global language, the Centre has no business in advising them to abandon English and take to any other language or Hindi, as done in this case. Mr. Shah's observations presuppose the position that English is not an Indian language. What he seems to have overlooked is that English has been recognised as an Indian language as much as Tamil or Telugu or Hindi have. This recognition is also due to the Sahitya Akademi, a central institution working for literary dialogue in the country. The Akademi, under the control of the Ministry of Culture, has, among others, been giving away annual awards for the best works of English, of course authored by Indians. Besides, the advantage that English gives to India has to be kept in mind. As pointed out by the president of the Karnataka Pradesh Congress Committee, D.K. Shivakumar, Bengaluru became India's IT capital because of English. It would be befitting for a person holding the office of Union Home Minister to shed any aversion to English, which has been a unifying force in a vast and diverse society such as India.

Expectedly, Mr. Shah's statement has been condemned politically, especially by the non-BJP Opposition parties. Even the AIADMK, a party that has been friendly to the BJP, has issued a statement through its coordinator and former Chief Minister, O. Panneerselvam, who expressed his disapproval of any move to "impose Hindi." But, most significantly, it is Tamil Nadu Chief Minister M.K. Stalin who rightly lashed out at Mr. Shah for seeking to create a "single identity," which, Mr. Stalin has pointed out, will not create unity. It is nobody's case that Indian languages, let alone Hindi, should not be nurtured and promoted. They all deserve the support of the state. Those in power should also follow up their words with substantive measures towards this direction. But, at the same time, no room should be given for any perception that the promotion drive will be at the cost of English. Respect for multiculturalism and a pluralistic identity is a quality that the political class, particularly those in power, should imbibe. Mr. Shah would do very well if he demonstrates, through words and actions, that he has that quality in abundance.

ON MAKING KANNADA MANDATORY FOR UG COURSES

The story so far: On April 6, the High Court of Karnataka stayed the implementation of two orders issued by the State Government making Kannada a compulsory language for undergraduate courses such as BA, BSc, BCom, etc., from the academic year 2021-22. With the interim order of the High Court, students admitted for the academic year 2021-22 are not required to compulsorily study Kannada for the time being.

What were the Government Orders?

The Higher Education Department of Karnataka, on August 7, 2021, notified a Government Order issuing guidelines to universities and affiliated colleges for implementing the National Education Policy (NEP), 2020.

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

Telegram: http://t.me/DreamIAS_Jamshedpur

As per the guidelines, students joining the undergraduate courses in Karnataka from the academic year 2021-22 were required to study Kannada as a compulsory language among the two languages mandated for the first four semesters. The government also prescribed preparation of a separate Kannada language syllabus for those who have not studied Kannada in 10+2 level and for those whose mother tongue is not Kannada.

In another Government Order, issued on September 15, 2021, the department modified the guidelines stating that only functional Kannada is to be taught to students from outside Karnataka or from foreign countries or for those who have not studied Kannada in any level up to 10+2.

What were the litigations that followed?

The Samskrita Bharati (Karnataka) Trust, a private institution, on September 23, 2021, moved the High Court questioning the legality of making Kannada a compulsory subject in the guise of implementing NEP 2020. Later, Shivakumar G.K. and several other students as well as Kshithija S. Shetty and fellow lecturers/professors of the Hindi language across the State joined the legal battle by filling separate petitions.

Apart from contending that making Kannada a compulsory language to be studied in UG courses violates various fundamental rights of the students and the teaching community, the litigants mainly argued before the High Court that making the study of a language mandatory is contrary to the very purpose of NEP-2020, which purports to offer a choice-based system to promote inclusivity. Stating that NEP 2020 does not specify any mandatory language criteria for higher education courses, the litigants have also pointed out that even the reports submitted by the task force and sub-committees of the Government on Karnataka on implementation of NEP 2020, did not contain any recommendation making Kannada a mandatory language for UG courses.

What has been the Central government's response?

The High Court had asked the Central government to make its stand clear on whether NEP-2020 prescribes such compulsion to study a particular language. The Central government, in its written statement, clarified to the court that "there is no mention of any compulsory language in NEP-2020." The Additional Solicitor General of India, in addition to reiterating the averments made in the statement, made it clear to the court that the regional language cannot be made a compulsory subject in implementation of the NEP.

What had the court ruled earlier?

Initially, the High Court on December 16, 2021, had directed that the students who have already chosen Kannada language should do so, but all such students who do not wish to take the Kannada language shall not be compelled to pursue it till further orders. The court had also directed the government to not insist on Kannada as a compulsory language.

In view of the stand of the Central government, the court said that prima facie the Government Orders of August 7 and September 15, 2021, cannot be implemented for now.

The State Advocate General of Karnataka wanted to argue on the powers of the State government to make Kannada a compulsory subject.

The court said that it would hear further arguments in July on the question of whether Kannada can be made a compulsory subject in higher studies (undergraduate) on the pretext of implementing the National Education Policy, 2020.

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

ILAYARAJA AND HIS COURT BATTLES: WHO OWNS THE RIGHTS TO A FILM SONG?

The order Ilayaraja has challenged came in 2020. It was on a suit filed against him by Indian Record Manufacturing Company Ltd (INRECO) and others, claiming complete copyright ownership of the musical works and sound recordings (masters) contained in these 30 films. INRECO claimed they had written agreements with respective film producers, who were the first owners of the musical works.

Ilayaraja contended that he had copyright over his musical work as composer and author, which the copyright of the owner of the film could not impeach. His lawyers said digital rights came into existence after 1996, and the music company cannot be allowed to hold rights to his work.

The court in 2020 held INRECO to be the owner of the copyright with exclusive right to exploit and utilise Ilayaraja's musical works, except that he had moral and literary rights to his works. The court ruled that when a song is part of a film, which is a composite work, the producer will be the owner have rights to the authorship. At the same time, the court prohibited the music companies from making profits off the composer's songs at reality shows and radio channels without his permission.

Who owns a song, according to law?

A song usually comprises three elements – lyrics, tune and voice. According to the Copyright Act, 1957 (amended in 2012), there is a clear line between the owners and the authors of copyright under the Copyright Act. The Act gives the right of royalty to lyricists and composers if the song plays outside of the cinema halls. According to section 2(d)(ii),a composer of musical work is an author and lyricist is an author in relation to literary work (lyrics) under section 2(d)(i) and the producer in relation to sound recording is an author under section 2 (d)(v). If the song is a part of a film and is going to be played as is, then the producer will be the owner of the song. The rule is the same if it's an album owned by a recording label.

Also, because a song has three different elements, all three can be registered separately under literary work, musical work and a performer's rights. The song as a whole (the master sound recording) will still be with the producer (music label or film producer).

If a restaurant, for example, is going to play songs by A R Rahman, or if Spotify will play a Shankar Ehsaan Loy playlist, these will be outside the scope of the films in which they exist. The composers, lyricists and the singers will receive a percentage of the royalties because the restaurant is charging the customers who are listening to the music while Spotify is also earning through its subscribers.

It's essential for film and music production companies to sign on third parties for issuing public performance licences and the collection of the fees. Some such organisations are Indian performing Rights Society Limited and Phonographic Performance Limited among others.

BENGALURU JOINS GLOBAL NETWORK OF SILK CITIES

Bengaluru has become the first Indian city to get into the global network of silk cities, celebrated French textile artist Isabelle Moulin said in Kolkata, expressing hope that in the next few years West Bengal's Murshidabad district — known to produce fine silk in the over the past 300 years — may join the global silk city network.

"Two days ago, I launched the membership of Bengaluru — the first Indian city in the global Silk City network. Now, we have nine countries and 13 cities. If everything goes fine, then with time, I hope 'Murshidabad Silk' too can make it to the network. The network helps artisans and craftsmen to exchange knowledge, build trade relations and understand various craftsmanship techniques," Ms. Moulin said during an interactive session with select media persons at Kolkata's Oxford Bookstore.

The French textile artist ,who is on a 'Silk trip' to India, said there are historical reasons why Bengaluru has been included in the Silky City Network. "The International Sericultural Commission was held at Lyon in the 1950s and came to Bengaluru [in 2013]. Also Bengaluru is the Silicon Valley of India and Lyon has a big cluster of innovation and IT," Ms. Moulin said. For the past three years, she has been working with stakeholders in Bengaluru to get into the global network of silk cities.

The Silk City network, where the French artist has played a pivotal role, so far has 13 "best silk–producing cities" which have "same philosophy to protect silk and its related heritage" across nine countries as its member (after the introduction of Bengaluru).

Bengal silk

In Kolkata, Ms. Moulin established an initial contact with the Crafts Council of West Bengal to undertake a study on Bengal Silk (Murshidabad Silk) opening up the possibility to put the craft on the global map. The history of silk weaving in Murshidabad goes back to the early eighteenth century during the Mughal rule, when the Nawab of Bengal, Murshidkuli Khan, shifted his capital from Dhaka to a town on the east of the Bhagirathi river, and named it Murshidabad.

"Silk is a living material and West Bengal has a rich silk tradition with varieties such as mulberry, tasar, eri and muga. The silk industry in West Bengal is mainly concentrated in Murshidabad and I am excited to learn more about Murshidabad Silk," Ms. Moulin said.

While Ms. Moulin said it may take years for Murshidabad to be included in the list and she will have to take up a new project for the endeavour, the textile artist emphasised that her work is to preserve the work of immensely gifted silk weavers and artists and provide them a global platform. The artists spoke about how silk at the global stage offers an "open market" and said the quality of Chinese is on a decline and "silk–producing cities here in India including Murshidabad can play a huge role as a change–maker".

HOW TO PURSUE 2 UNIV DEGREES AT ONCE

It will essentially allow students to simultaneously opt for two programmes at the undergraduate, diploma and postgraduate levels. Both degrees can be in physical mode, or one offline and another online, or both offline. But it will be optional for the universities to adopt these guidelines.

What are the subject combinations that a student will be allowed to take up?

Prof Kumar said the permitted combination of subjects will vary from one institution to another as different institutes set different criteria for admissions. He made it clear, however, that it will be possible for a student to pursue a degree in humanities and sciences at once, or two degrees falling in the same stream. For instance, if a student is already enrolled in a BSc mathematics degree and also wants to pursue a bachelor's degree in History, she will be allowed to do so. If a

university offers an offline BCom programme during the evening shift and a full-time BA programme during the morning shift, a student may enrol in both programmes.

Part of NEP vision

The rationale behind the decision to allow students to pursue two academic degrees simultaneously is to help them gain diverse skills, according to the UGC. It is also aimed at translating the NEP's vision of breaking down interdisciplinary separations. It remains to be seen how the proposal is received by the academia and student community.

What are the possible combinations in terms of modes of study?

The move allows a student to pursue two academic programmes, one in full-time physical mode, and another in open and distance learning mode. They can also join a programme in a physical mode in a university, along with another programme in an online mode.The third choice for students is that they can pursue two online degrees simultaneously.

On the question of attendance, particularly in case of a student choosing the purely offline mode, Prof Kumar said that in such cases, students and colleges will ensure that class timings for one programme do not overlap with that of the other. Also, the guidelines will not apply to MPhil and PhD programmes. Students can only pursue a degree or diploma course in distance mode/online mode at institutions that have been approved by the UGC, and concerned bodies of the Government of India.

Will admission eligibility criteria and attendance requirements be revised?

The eligibility criteria for each of the programmes will remain unchanged and admissions will be conducted based on the existing UGC and university norms. If a student aspires to pursue a specialised degree in any domain but the minimum criteria require her to have basic knowledge of the subject, then she may not be able to enrol in that particular course. But again, that will depend on the college or university in question. Since all academic programmes have minimum attendance requirements for students to be able to take the exams, universities may have to devise or revise the attendance criteria for these courses. "UGC does not mandate any attendance requirements and these are the policies of the universities," Kumar said.

How practical is the idea?

Prof Kumar said the guidelines are part of implementation of the NEP which seeks to provide as much flexibility as possible so that students can receive multidisciplinary education. On the question of whether the proposed structure is practical, he said, "It of course depends on the capability of the student."

He acknowledged that for a student to pursue two degrees in offline mode will be difficult, but not impossible. "For example, if a student pursuing B Tech in IIT Delhi wants to study BA French in JNU in the evening, she can very well do that by just walking across the road," he said. There are no practical difficulties if one of the two degrees is pursued online, he added.

MIDDAY MEAL AND SUPPLEMENTS

From the next academic session, Karnataka is likely to become the 13th state to provide eggs under the midday meal scheme, which is among the largest initiatives in the world to enhance nutrition levels of school-going children through hot cooked meals.

The proposal, which faces opposition and awaits the Karnataka government's final stamp of approval, comes on the back of successive surveys pointing out high prevalence of malnutrition, anemia and low immunity among children in many parts of the state, where the National Family Health Survey-V found 35% children under five stunted, and around 20% wasted.

What is the history of the scheme?

The current version of the programme, renamed PM Poshan Shakti Nirman or PM Poshan in 2021, traces its roots to 1995; it was launched as a centrally sponsored scheme on August 15 that year across 2,408 blocks for students up to Class 5. In 2007, the UPA government expanded it to Class 8.

However, the first initiative to provide meals to children had been taken by the erstwhile Madras Municipal Corporation around 1920. In post-Independence India, Tamil Nadu was again the pioneer, with Chief Minister K Kamaraj rolling out a school feeding scheme in 1956. Kerala had a school lunch scheme run by a humanitarian agency from 1961. The state government officially took over the initiative on December 1, 1984, making Kerala the second state in the country to have a school lunch programme. Over the next few years, many other states launched their own versions of the scheme, and finally in 1995, the Centre stepped in.

What is the scale of the scheme today?

The scheme covers 11.80 crore children across Classes 1 to 8 (age group 6 to 14) in11.20 lakh government and government-aided schools and those run by local bodies such as the municipal corporations in Delhi under the provisions of the National Food Security Act, 2013 (NFSA). In the Budget for 2022-23, the Centre has earmarked Rs 10,233 crore for the scheme, while the states are expected to spend Rs 6,277 crore. It is not just a scheme, but a legal entitlement of all school-going children in primary and upper primary classes, through the National Food Security Act (NFSA), 2013, as well as the Supreme Court's ruling in People's Union of Civil Liberties vs Union of India and Others (2001).

What is usually on the menu?

The menu varies from one state or Union Territory to another. But the authorities need to ensure that the nutritional component of the meal made up of rice, pulses, vegetables, oil and fat provide at least 450 calories and 12 gm protein to children in primary grades. For upper primary children, the requirements are 700 calories and 20 gm protein. The variations are in the cases of additional items such as milk, eggs, chikki, or fruits that the states provide as supplementary nutrition, the expenses for which are borne by the state government.

How wide are these variations in supplementary nutrition?

For instance, eggs, and bananas to vegetarians, are currently provided only by 13 states and three UTs. Tamil Nadu provides eggs on all school working days; Andhra Pradesh, at least five days a week; Telangana and Andaman and Nicobar Islands, thrice a week; Jharkhand, Odisha, Tripura

and Puducherry, twice a week; Bihar, Kerala, Mizoram, Uttarakhand, West Bengal, Ladakh and Assam, once every week; and Sikkim, once a month, according to government response in Parliament and annual work plan and budget documents of the scheme.

States and UTs that provide milk include Gujarat, Karnataka, Kerala, Madhya Pradesh, Mizoram, Rajasthan, Uttarakhand, Ladakh and Puducherry. Among other food items, West Bengal provides cheese and mushroom on a limited scale, while Andhra Pradesh and Maharashtra provide chikki. In Lakshadweep, chicken is provided as well.

Why are eggs part of the menu in so few states and UTs?

Some states, such as Arunachal Pradesh, find it costly. But dietary choices are an intensely contested area in India due to caste rigidities, religious conservatism and regional differences. Thus, the debate becomes political too. As a result, despite successive scientific studies, including those commissioned by state governments, showing the benefits of giving children eggs, many states have been reluctant about adding eggs to the school lunch menu.

For example, Chhattisgarh, which found a low quantity of protein in 30-35% of the samples from meals it tested, decided to overcome the problem by giving eggs two days a week but ran into political opposition. In Madhya Pradesh, the Congress government's decision to add eggs to the menu of anganwadis was overturned by the BJP government in 2020. In Karnataka, proposals to add eggs have been fiercely resisted in the past by Lingayat and Jain seers.

But many states have tackled such objections by making fruits available as an alternative to eggs. Tamil Nadu, in fact, puts eggs on the plate of children in various combinations: pepper egg, onion tomato masala egg, rice and pepper egg on various days of the week.

Under the rules, the allocation of Rs 4.97 per child per day (primary classes) and Rs 7.45 (upper primary) are shared in 60:40 ratio with states and UTs with a legislature, and 90:10 with the Northeastern states, Jammu and Kashmir, Himachal Pradesh and Uttarakhand, while the Centre bears 100% of the costs in UTs without legislature.

But the states and UTs that supplement the meals with additional items such as milk and eggs contribute more. Components such as payments to cooks and workers are also split in the same ratio between the Centre and states. However, the Centre bears the entire cost of foodgrains and their transportation, and also handles the expenditure on management, monitoring and evaluation of the scheme.

WEIGHING THE CHOICES

As India sees a steady slump in its daily coronavirus count, the Centre has announced opening up the third, or 'precautionary doses', to everyone over 18 years. The restriction is that these doses must be the same as the ones administered earlier and there must be at least a nine-month gap following the second dose, implying that Covishield and Covaxin will comprise almost all of the demand. The experience of the past two years from around the world has shown that the third dose has only a little additional benefit over two doses in preventing an infection because of the constantly mutating character of the virus. But, because it helps keep antibody levels boosted, they are useful in protecting against a severe infection. A major aspect of vaccines is the risk of adverse events following vaccination, and previous experience has suggested that certain vaccines may induce a higher risk of blood clots in younger populations. While these instances are extremely limited, they become particularly relevant in India given the size of the population and that a large

number of people — young and old — have already been exposed to the virus. Normally, a technical committee of experts, such as the National Technical Advisory Group on Immunisation (NTAGI), weighs the evidence before recommending an approved vaccine for roll-out but this practice has been effectively eschewed in the context of booster doses, as well as earlier decisions to inoculate those below 15.

The pandemic is far from over and reports from several other countries suggest that no country can consider itself immune from emerging variants. With schools reopened, mask mandates made voluntary and restrictions on international travel lifted in India, it is reasonable for the Centre to anticipate a future wave led by a more transmissible variant — reports of the highly infectious XE variant have already surfaced here — and, therefore, take steps to buffer against it. However, there is no public information on whether studies have been done to establish if administering a different vaccine as a third dose is better at boosting antibodies than repeating a vaccine. This ideally ought to have been a major area of research for the Centre. Another aspect that bears a closer look is progress on vaccines other than Covaxin and Covishield. The Serum Institute of India appears to be gearing up for large volumes of, not Covishield, but Covavax. Covaxin, following the World Health Organization's recommendation to pause exports pending an upgrade of its production facilities, is also unlikely to see fresh stocks any time soon. Both vaccines in fact will be available at discounted rates in private facilities. Demand is currently lacklustre but were it to spike, will supply be adequate? The Centre needs to be more transparent about the rationale guiding its vaccine policy.

WHAT'S IN THE NEW MUSEUM TO PRIME MINISTERS: CONCEPT, CONTENT, TECHNOLOGY

Prime Minister Narendra Modi inaugurated the Pradhanmantri Sangrahalaya at Teen Murti Estate in New Delhi on Thursday. The museum recalls the tenures of 14 Prime Ministers from Jawaharlal Nehru to Manmohan Singh, and the various challenges they navigated while leading the country. (The museum is a work in progress, and Modi's own tenure is not part of the narrative yet.)

"Desh ke har pradhanmantri ne samvidhaan sammat loktantra ke lakshyon ki poorti mein bharsak yogdaan diya hai (All Prime Ministers have contributed immensely towards achieving the goals of constitutional democracy)," Modi said at the inauguration.

Concept and controversy

The idea of a museum dedicated to India's Prime Ministers was mooted in 2016. The Congress opposed the idea, since Teen Murti Estate was Nehru's residence, which was later turned into a memorial to the first Prime Minister. Manmohan Singh wrote to Modi, expressing concern over the "agenda" to "change the nature and character" of Nehru Memorial Museum and Library (NMML) and the Teen Murti complex.

NMML officials say Teen Murti Estate, where Nehru lived for 16 years, is the natural home for the Pradhanmantri Sangrahalaya because of the continuity the site represents.

The Rs 270-crore project was approved in 2018, and NMML was appointed the nodal agency for the project in May 2019. Delays in civil works and content and curation issues, as well as disruptions caused by pandemic lockdowns resulted in the project missing the completion deadline of October 2020.

Erstwhile Nehru Museum

What used to be the Nehru Museum has been integrated with the new building. The Nehru Museum is now designated as Block I of the Prime Ministers' Museum, and has been technologically upgraded. A number of gifts Nehru received from all over the world, which had not been put on display so far, have been exhibited in the toshakhana on the first floor of the renovated Block I.

Two new galleries — Constitution Gallery and India at Independence: British Legacy — have been added on the ground floor.

The new building

The top of the new museum — Block II of the complex — is built in the shape of the Ashok Chakra, from where visitors walk down to the various galleries. The ground floor has galleries dedicated to Gulzarilal Nanda, Lal Bahadur Shastri, Indira Gandhi, P V Narasimha Rao, H D Deve Gowda, I K Gujral, Atal Bihari Vajpayee, and Manmohan Singh.

The first floor has galleries dedicated to Rajiv Gandhi, V P Singh, Chandra Shekhar, Morarji Desai, and Charan Singh. The guiding principle has been to recognise the contribution of all Prime Ministers in a non-partisan manner, officials said.

The Shastri gallery highlights his role in the Green Revolution and the Indo-Pak war of 1965. The Indira gallery highlights India's role in the liberation of Bangladesh, and the nationalisation of banks. The Vajpayee gallery celebrates him as a great parliamentarian and orator, and highlights India's victory in the Kargil War and the Pokhran nuclear tests. The economic reforms of the early 1990s and the civil nuclear deal with the US are highlighted among Manmohan Singh's contributions.

Over the last two years, families of all former Prime Ministers were requested to give some of their personal items for display. Shastri's family gave his charkha, badminton racquet and some letters; Morarji's family donated his copy of the Bhagavad Gita, his Gandhi topi, pen, and rudraksh mala.

Some handwritten diaries of Chandra Shekhar are on display, as are Vajpayee's Bharat Ratna medal, spectacles, wristwatch, and some letters.

No new personal items have been added in the Indira and Rajiv galleries.

The displays comprise photographs, speeches, video clips, newspaper interviews, and some original writings. These were collected from Doordarshan, Films Division, Sansad TV, the Ministry of Defence, Indian and foreign media houses and news agencies, and the toshakhana of the Ministry of External Affairs.

Families were requested for valuable information about the leaders; most of this content has been acquired on perpetual licence.

The 10,491-sq-m museum, built at a final cost of Rs 306 crore, has 43 galleries, and can accommodate 4,000 visitors at a time. (Express Photo: Abhinav Saha)

Virtual engagement

The 10,491-sq-m museum, built at a final cost of Rs 306 crore, has 43 galleries, and can accommodate 4,000 visitors at a time. There is a 'Time Machine' to transport visitors into the past,

and an engagement zone, 'Anubhuti', offers a walk with the hologram of any Prime Minister, a picture with the PMs, or a letter 'signed' by them.

The museum makes extensive use of virtual reality, augmented reality, holograms, and audio-visual elements. A levitating emblem is the centrepiece of the reception zone, and 'Glimpses of the Future' on the ground floor allows visitors to be virtually part of future projects.

ARMED DRONE THAT STAYS ALOFT, WAITING TO ATTACK

The Army has issued a Request for Information (RFI) for anti-armour loiter ammunition for its mechanised forces which can be used on enemy tanks and other targets in the plains and deserts of Western India as well as on high altitude areas in the Northern borders in Ladakh.

What exactly is a CALM System?

The CALM System is a pre-loaded canister with loiter ammunition or a drone which once fired can remain aloft for a period of time over the area of operation, and when a target is sighted it can be guided down to destroy the target with the explosive payload that it carries. Usually, loiter ammunitions carry a camera which is nose-mounted and which can be used by the operator to see the area of operation and choose targets. These munitions also have variants which can be recovered and reused in case they are not used for any strike.

What is the RFI that the Army has issued and when?

On April 8, the Army issued a RFI for the Cannister Launched Anti-Armour Loiter Ammunition (CALM) System. The Army has specified that it intends to procure 150 such systems which will be launched from the BMP Infantry Fighting vehicles of the Mechanised Infantry which are especially modified for this purpose. These systems are being procured under the 'Make in India' and 'Atmanirbhar Bharat' programmes.

What use of the equipment has been specified in the RFI?

The RFI states that the CALM Systems will be used in the plains and deserts of the Western parts of the country as well as the Northern high altitude areas of heights up to 5,000 metres. In the plains and deserts, the system should be able to operate between the temperature of zero degrees Celsius to 45 degrees Celsius while in high altitude it should be able to operate between minus 15 degrees Celsius to 40 degrees Celsius. It will be employed by the Mechanised Infantry units of the Army for surveillance of beyond line of sight targets by day and night in real time and beyond visual range engagement of enemy armoured fighting vehicles and other ground based weapon platforms over extended ranges.

Has this kind of system been used in combat?

The CALM System had been very effectively used in the Armenia-Azerbaijan conflict in 2021 where the Azerbaijan forces made extensive use of Israeli systems to wreak havoc on Armenian tanks, radar systems, communication hubs and other military targets. The top down attack capability of the loiter ammunition gives it a big advantage over targets such as tanks which are vulnerable to any attack on the top where the armour protection is weak. The Russian military is also using their ZALA KYB loiter ammunition in Ukraine while some reports say that the US has also provided Ukraine with its Switchblade loiter munitions that could target Russian armour 10 km away.

IMPROVED GSLV TO BE READY BY THIS YEAR

The Geosynchronous Satellite Launch Vehicle (GSLV) with improvements added to its cryogenic upper stage (CUS) is expected to be ready in the second half of this year.

A high-level panel which examined last year's failed GSLV-F10/EOS-03 mission had recommended measures for making the CUS more robust. Indian Space Research Organisation's Liquid Propulsion Systems Centre (LPSC) is tasked with making the required modifications to the cryogenic engine-powered upper stage of the GSLV Mk II rocket.

A senior official of the Vikram Sarabhai Space Centre (VSSC), ISRO's lead unit on launch vehicles, says the next GSLV flight will be held once the modifications are incorporated.

The GSLV-F10 mission on August 12, 2021 was designed to place the earth observation satellite EOS-03 in a geosynchronous transfer orbit, but the upper stage of the rocket malfunctioned, forcing the space agency to abort the mission. A national-level Failure Analysis Committee (FAC) later concluded that a leak in a Vent and Relief Valve (VRV) had led to a lower build-up of pressure in the Liquid Hydrogen (LH2) propellant tank, leading to a failed mission.

To avoid leaks

Modifications planned include a mechanism to ensure sufficient pressure in the tank before the engine burns and strengthening of the VRV to avoid leaks.

On Thursday, Union Minister of State for Science & Technology Jitendra Singh informed the Rajya Sabha in a written reply that computer simulations as well as multiple ground tests, "closely simulating the conditions in the GSLV-F10 flight, had validated the analysis of the FAC." He points out that the satellite for the next GSLV mission is expected to be ready for launch in the fourth quarter of 2022 and the mission failure is not likely to delay "related projects".

The FAC, whose report was published in March, points to a leak in the VRV as the underlying reason for the failure. Pressure build-up in the liquid hydrogen (LH2) propellant tank was low when the upper stage engine was to ignite. This caused the fuel booster turbo pump inside the LH2 tank, which feeds the main turbo pump of the engine to malfunction, affecting the flow of propellant into the engine thrust chamber.

NITI PUTS OUT ENERGY AND CLIMATE INDEX LIST

Gujarat has topped the list for larger States in the NITI Aayog's State Energy and Climate Index–Round 1 that has ranked States and Union Territories (UTs) on six parameters including discoms' performance, energy efficiency and environmental sustainability.

The States have been categorised based on size and geographical differences as larger and smaller States and UTs. The index is based on 2019-20 data.

Gujarat, Kerala and Punjab have been ranked as the top three performers in the category of larger States, while Jharkhand, Madhya Pradesh and Chhattisgarh were the bottom three States. Goa emerged as the top performer in the smaller States category followed by Tripura and Manipur. Among UTs, Chandigarh, Delhi and Daman & Diu/Dadra & Nagar Haveli are the top performers.

Punjab was the best performer in discom performance, while Kerala topped in access, affordability and reliability category.

Haryana was the best performer in clean energy initiative among larger States and Tamil Nadu in the energy efficiency category.

First step

"The State Energy and Climate Index (SECI) is the first index that aims to track the efforts made by States and UTs in the climate and energy sector...These parameters have been devised keeping in mind India's goals for climate change and clean energy transition," the report said.

It said the SECI is the first step in this journey where States can explore and benchmark themselves on various parameters. For instance, in terms of energy efficiency, Tamil Nadu and Maharashtra have done well while in terms of Discom's performance, two small UTs — D&D and D&N — have done well.

Noting that for a few States, data for a few indicators are not available, which has also affected the overall ranking of the States, the report said data update and validation need to be a priority of State governments going forward to help them design better policies.

WHAT DOES A DOWNGRADE IN AVERAGE MONSOON RAINFALL MEAN?

In its first-stage long range forecast for the 2022 southwest monsoon, the India Meteorological Department (IMD) has forecast normal rainfall during the season. It has, however, downgraded the Long Period Average (LPA) for all-India monsoon rainfall — from 88.06 cm cm to 87 cm, effective from June this year. A look at how rainfall is distributed across the country through the year, and what the downgrade means:

How much rainfall does India receive on average in a year?

Based on trends for 1961-2010, India's normal annual rainfall is about 1176.9mm. Of this, nearly 74.8%, or 880.6 mm (88.06 cm), occurs during the Southwest monsoon from June to September. This is the LPA rainfall for the monsoon, the figure that has been revised.

Before the revision, the distribution of the rest of the rainfall was 3.4% during winter (January-February); 11.2% in the pre-monsoon season (March-May), and 10.5% during the post-monsoon season (October-December).

When is the LPA revised?

It is an international convention to verify the quantum of annual and seasonal monsoon rainfall once in a decade. The monsoon season's LPA rainfall acts as a baseline figure calculated over a 50-year period. The LPA is revised, if required, depending on any variations observed from the rainfall data obtained from the network of rain gauges.

In 2002, the IMD operated 1,963 rain gauges located across 523 districts. As of 2020, rainfall data was being collected from 4,132 rain gauges spread uniformly across 703 districts.

Between 2005 and 2010, India's LPA was taken at 89.04 cm. Between 2011 and 2015, the IMD revised it to 88.75 cm. It was 88.06 cm between 2018 and 2021. From the upcoming monsoon the revised LPA will be 87 cm.

Why has it been downgraded?

"The monsoon season rainfall shows an epochal behaviour, wherein the monsoon can shift between dry and wet epochs (30-to-50-year periods) in certain decades. The reduction in the rainfall is thus due to the natural multi-decadal rainfall variability," said Mrutyunjay Mohapatra, director general, IMD.

The decadal variability between 1901 and 2020 shows the southwest monsoon rainfall underwent a dry epoch between 1901 and 1921. This was followed by a wet epoch that prevailed till 1970. From 1971, the monsoon has been passing through a dry epoch that persists till date.

"The dry epoch started in 1971 and has continued for five decades; thus the decadal mean rainfall values have remained negative. The decadal all-India southwest monsoon rainfall has been thus reducing by 1 cm. For 2011-2020, this value is minus 3.8, below normal," said Pulak Guhathakurta, head, Climate Research Division at IMD, Pune.

But the peak of this dry epoch has been surpassed with the monsoon set to revive, Mohapatra said. "The future trend suggests that the decadal mean value will reach near normal during 2021-2030. It will then turn positive, meaning that the decade 2031-2040 will be the beginning of a wet epoch," he said.

The decadal mean value for the ongoing decade is predicted to be around minus 1.4 to 1.5.

Normally, the realised monsoon rainfall remains below normal for most years in a decade during a dry epoch. On the other hand, rainfall is normal or above normal during most of the years in a decade when it is a wet epoch.

NO EL NINO EXPECTED, IT WILL BE A 'NORMAL' MONSOON, SAYS SKYMET

The southwest monsoon is likely to be "normal" in 2022, though rainfall in August, the second rainiest month, will likely be subdued, the private weather company Skymet said on Tuesday.

"Normal is 98% of the historical average of 88 cm of rainfall for the four months from June to September," it said. Rajasthan, Gujarat, Nagaland, Manipur, Mizoram and Tripura are likely to be rain deficit throughout the season. The northeastern States have a high base level of rainfall.

In the south, Kerala and north interior Karnataka will get subdued rainfall in the core monsoon months of July and August. On the other hand, the key kharif crop regions of Punjab, Haryana, and Uttar Pradesh and the rain-fed areas of Maharashtra and Madhya Pradesh would receive "above normal" rainfall, the agency said.

The El Nino, characterised by a warming of temperatures in the Central Pacific and associated with poor rainfall over India, is not expected to surface this year. Its converse, or La Nina, had helped with two years of above normal rainfall in 2019 and 2020 and "normal" rainfall in 2021.

"The last two monsoon seasons have been driven by back-to-back La Nina events... the occurrence of El Nino, which normally corrupts the monsoon, is ruled out," Yogesh Patil, CEO, Skymet, said.

However, there would be bursts of intense rainfall, followed by long dry intervals, he added.

Another factor that influences monsoon is the Indian Ocean dipole, whose "positive" phase corresponded to good rainfall and "negative" the opposite. "The Indian Ocean dipole is neutral, albeit having a propensity of negative inclination... Monsoon will have to ride over ENSO — neutral conditions, while battling resistance from IOD, especially during the second half of the season. This possibly can lead to extreme variability in the monthly rainfall distribution," the agency said.

The first half of the monsoon — June and July — is expected to be better than the second. June was expected to get 7% more rain than normal, July 100%, August 95% and September, when the monsoon starts to wane, 90%. The past few years, however, have seen unusually high rainfall in September.

The India Meteorological Department , which issues the official forecast, is expected to announce its first forecast later this week. The agency follows a multi-stage forecast system with an update in June.

BENGAL COAST FACES MOST EROSION

The Ministry of Earth Sciences, in a response to a question, informed the Lok Sabha earlier this week that of the 6,907.18-km-long coastline of the Indian mainland, about 34% is under varying degrees of erosion, while 26% is of an accretional nature and the remaining 40% is in a stable state.

"The National Centre for Coastal Research (NCCR), Chennai, an attached office of the Ministry of Earth Sciences (MoES), is monitoring shoreline erosion since 1990 using remote sensing data and GIS mapping techniques. About 6,907.18 km long Indian coastline of mainland has been analysed from 1990 to 2018," the Ministry said in response to a question from Bharatiya Janata Party (BJP) MP from Bhubaneswar, Aparajita Sarangi, on April 6.

In terms of percentage, West Bengal, located on the eastern coast of the country, with a 534.35-km-long coastline, suffered erosion along about 60.5% of the coast (323.07 km) over the period from 1990 to 2018. This is followed by Kerala on the west coast, which has 592.96 km of coastline and 46.4% of it (275.33 km) faced erosion. Tamil Nadu, with a long coastline of 991.47 km, recorded erosion along 42.7% of it (422.94 km). Gujarat, with the longest coastline of 1,945.6 km, recorded erosion along 27.06% (537.5 km) of it. In the Union Territory of Puducherry, with a 41.66-km-long coastline, about 56.2% of its coast (23.42 km) recorded erosion.

Another organisation under the Ministry, the Indian National Centre for Ocean Information Services (INCOIS) has prepared and published an atlas of Coastal Vulnerability Index (CVI) maps for the entire coastline of India at a 1:100000 scale, the Ministry informed Parliament.

Policy on displacement

The Ministry stated that the 15th Finance Commission had recommended the creation of a National Disaster Risk Management Fund (NDRMF) and State Disaster Risk Management Fund (SDRMF) comprising a mitigation fund at the national and State levels (NDMF/SDMF), and a response fund at the national and state levels for the award period from 2021-22 to 2022-26.

"The Commission has also made specific recommendations for 'Mitigation Measures to Prevent Erosion' under NDMF and 'Resettlement of Displaced People Affected by Erosion' under NDRF," the response pointed out.

MICROPLASTICS IN CAUVERY RIVER MAY BE HARMING FISH: IISC. STUDY

A new study led by Prof. Nongthomba, published in the journal Ecotoxicology and Environmental Safety, reveals that pollutants like microplastics may be causing growth defects in fish, including skeletal deformities, in the Cauvery river.

Prof. Nongthomba's lab conducted a comprehensive study of pollution at the KRS (Krishna Raj Sagar) dam and its potential effects on fish. They collected water samples from three different locations with varying speeds of water flow – fast-flowing, slow-flowing, and stagnant – since water speed is known to affect the concentration of pollutants.

In the first part of the study, the team analysed the physical and chemical parameters of the water samples. All but one parameter were within the prescribed limits. The exception was dissolved oxygen (DO), whose levels were much lower than they needed to be in samples collected from the slow-flowing and stagnant sites. Water from these sites also had microbes such as Cyclops, Daphnia, Spirogyra, Spirochaeta and E. coli, well-known bio-indicators of water contamination.

Using a technique called Raman spectroscopy, the team detected microplastics – minute pieces of plastic often invisible to the naked eye – and toxic chemicals containing the cyclohexyl functional group (atoms in a compound that determine its chemical properties).

Microplastics are found in several household and industrial products, and chemicals containing the cyclohexyl group, such as cyclohexyl isocyanate, are commonly used in agriculture and the pharmaceutical industry.

In the second part of the study, they investigated whether pollutants in water could account for the developmental abnormalities seen in wild fish. They treated embryos of the well-known model organism Zebrafish with water samples collected from the three sites, and found that those exposed to water from the slow-flowing and stagnant sites experienced skeletal deformities, DNA damage, early cell death, heart damage, and increased mortality. These defects were seen even after microbes were filtered out, suggesting that microplastics and the cyclohexyl functional groups are responsible for the ailments in the fish.

The researchers also found unstable molecules called ROS (Reactive Oxygen Species) in the cells of the fish that developed abnormally.

As millions of people are dependent on Cauvery river water and a recent study from the Netherlands has shown that microplastics can enter the bloodstream of humans, Prof. Nongthomba said, "The concentrations we have reported may not be alarming yet for humans, but long-term effects can't be ruled out."

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BUSINESS & ECONOMICS

GROWTH PANGS

The World Bank pared its 2022 growth projections for South Asian economies to 6.6% on Wednesday, from an estimate of 7.6% released in January, emphasising that post-pandemic growth was already uneven and fragile before the Russia-Ukraine conflict triggered fresh challenges. The ripple effect of high oil and food prices that prevailed even before the war and were exacerbated since February 24, are key factors worrying the Bank as people's real incomes take a hit. India's GDP, the Bank reckons, may now grow by 8% in 2022-23, not 8.7% as it had earlier forecast, before dropping further to 7.1% in 2023-24. The Bank's chief economist has said that their overall assessment is that GDP growth could actually be 1.3 percentage points lower, or 7.4%, but they refrained from making an adjustment of that magnitude in their headline projection due to some positive surprises in recent data such as strong digital services exports. The tepid post-COVID recovery in India's household consumption will be further hemmed in by high inflation and the incomplete labour market revival. More importantly, a nowcast of high frequency indicators by the Bank's mandarins suggests India's growth was already experiencing a relative slowdown in the January to March 2022 quarter, compared to previous quarters. India's recovery varies widely across sectors and manufacturing remains troubled due to weak demand and increasing input costs. This is borne out by the latest industrial output data.

The World Bank's prognostications about India's growth prospects seem more sanguine than some others. The Asian Development Bank expects India's GDP for the year to rise 7.5% with retail inflation of around 5.8%. And the RBI reset growth hopes from 7.8% in February to 7.2%, while raising its inflation projection for the year more sharply from 4.5% to 5.7%. Economists expect inflation to trend much higher, even above 7% in the first half of the year, and well over the comfort threshold of 6% over the full year. Monetary and fiscal policy mandarins need to address inflation more aggressively, lest it derails the recovery which the Bank has warned could renew pressure on improving bank and corporate balance sheets. There is a need to rethink growth engines as well — the pursuit of free trade agreements indicates a fresh stance. The shunning of RCEP needs a revisit, as advised by key ally Japan — lest rivals like Vietnam dent India's future exports in job-intensive sectors such as textiles. The farm sector, that has so far been resilient through the pandemic's worst phases and could now gain due to high global food prices, needs careful handling too. While the normal monsoon forecast bodes well for the kharif crop and hopefully, rural demand, the cost of inputs — be it fertilizers or chicken feed — is rising sharply for farmers too.

ALARM BELLS

Just four days after the RBI announced that it would be prioritising inflation over growth, official data show retail inflation disquietingly accelerated to a 17-month high of 6.95% in March. The pace of acceleration in price gains appears to have caught most economists too off guard. The RBI's latest Survey of Professional Forecasters, released last week, shows the median Q4 inflation expectation of the 33 panellists polled made an assumption for March CPI inflation that was 73 basis points lower at 6.22%. The upsurge was largely driven by food prices, which at the food and beverages group level accounts for 46% of the weight of the Consumer Price Index. While inflation in food and beverages accelerated by 154 basis points from the previous month's pace to an annualised rate of 7.47%, the month-on-month inflation too was a significant 1.3%. Prices of oils and fats rose 18.8% year-on-year and by as much as 5.3% sequentially. Even granting that the war

in Ukraine has severely disrupted the import of sunflower oil and forced edible oil importers to seek alternative supplies at a premium, this is one food item that has been witnessing protracted price pressures. It reflects poorly on the Government's efforts to proactively address the supply related issues. Meat and fish prices too saw a sharp spike, at 9.63% annualised and a 5% sequential acceleration. RBI Governor Shaktikanta Das pointedly flagged the war's impact on feed costs and warned that global supply shortages could continue to have a "spillover impact on poultry, milk and dairy" prices.

Consumers in the hinterland, where a vast majority of the poor live, have been harder hit, with rural inflation running a sizeable 71 basis points faster at 7.66%. Food price inflation for rural buyers measured by the Consumer Food Price Index, exceeded the 8% level, at 8.04%, hinting at the increasing precarity and nutritional vulnerability in the countryside. Most disconcertingly, the March inflation print barely factors in the pass-through impact of the ongoing increases in the pump prices of petrol and diesel, as state-run refiners began raising prices only from March 22. With road freight rates for transporting everything from farm produce to industrial goods set to rise to reflect the increase in fuel costs, looking ahead the 8% inflation seen in the transport and communication subgroup may end up seeming rather tame in comparison. Two other RBI surveys, on Households' Inflation Expectations and Consumer Confidence, also raise cautionary flags. While the former shows both three-month and one-year ahead expectations rose from the last round to 10.7% and 10.8%, respectively, the latter points to consumer confidence remaining negative, an improvement in sentiment notwithstanding. Specifically, the one-year ahead expectations on inflation show about 84% consumers see price gains intensifying and the majority expect to spend more on essentials than non-essentials. It is time policymakers act to tame inflation before it dampens consumption and growth any further.

HOW TO WITHDRAW CASH FROM AN ATM THROUGH UPI, WITHOUT A CARD

"At present the facility of cardless cash withdrawal through ATMs is limited only to a few banks. It is now proposed to make the facility available across all banks and ATM networks using UPI," RBI Governor Shaktikanta Das had said while making the announcement. How will the process work and will it have any impact on debit card usage? We explain.

How will cash withdrawals via UPI work?

While the RBI did not disclose specific details on how the process will work, a person having knowledge about the matter said ATMs soon will show an option to withdraw cash using UPI. Upon selecting that option, a user would have to add the amount they wish to withdraw following which a QR code would be generated on the ATM machine. The user would then have to scan that code on their UPI app and enter their pin following which the ATM will dispense cash, the person added.

According to Das, allowing cash withdrawals through UPI would increase the security of such transactions. "In addition to enhancing ease of transactions, the absence of the need for physical cards for such transactions would help prevent frauds such as card skimming and card cloning, among others," the RBI Governor informed.

What is card skimming?

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Criminals steal data from credit/ debit cards by tracking a card swiped at ATMs. They pick this information from using a skimming device that reads the card's magnetic strip. These devices are surreptitiously installed on ATMs.

Once the device picks up the data, it can be used to gain unauthorised access to the user's banking records. The stolen information can be coded onto a new card, a process called cloning, and be used to make payments and transact with other bank accounts. Problematic ATMs that function intermittently, and the ones located in isolated areas are often used to install such skimming devices.

Fraudsters also install scanning devices on point-of-sale machines. These devices stealthily scan a card before it is swiped at the payment counter at a departmental store. These are especially tough to spot if the billing counter is not in the line of sight of the card owner. These devices are difficult to identify as they appear to be a legitimate part of an existing ATM, or like a regular in-store card reader. It is skilfully fitted into the payment machines.

What are the current ways of cardless cash withdrawals at ATMs?

At the moment, a few banks such as ICICI Bank, Kotak Mahindra Bank, HDFC Bank and SBI, allow their users to withdraw cash from their ATMs without a card, a feature introduced in the wake of the Covid-19 pandemic.

However, it is a long-drawn process. Users have to install apps of their respective banks and first select the option of cardless cash withdrawal on the app, followed by adding beneficiary details and the withdrawal amount. After confirming the mobile number of a user, the bank will send an OTP and a nine-digit order ID to the beneficiary's phone. Post that, the beneficiary would have to visit an ATM and key-in the OTP, order ID, amount for transaction and mobile number to get the cash.

Besides this cumbersome process, cardless cash withdrawals have certain limits as well — such withdrawals start from Rs 100 per transaction and have an upper limit put in place by respective banks. For HDFC Bank users, such withdrawals are restricted to a maximum of Rs 10,000 each day and Rs 25,000 per month. Such withdrawals also come with a service fee of Rs 25 per transaction. At the moment, it is unclear whether UPI-based cash withdrawals would also be subject to the same restrictions and service fee.

RBI's Deputy Governor T Rabi Sankar said that the central bank is currently working on the "systemic changes" that may need to be done and the "issues will clear in the next 2-3 months". Das said that the RBI would soon send separate instructions to the National Payments Corporation of India (NPCI), ATM networks and banks.

Could this impact debit card usage?

Debit cards are currently the most popular way of cash withdrawals at ATMs. As of now, there are more than 900 million debit cards in the country, and experts have cautioned that allowing cash withdrawals through UPI could negatively impact debit card usage.

"There could be a potential first-order impact on debit cards as this step would reduce the need to carry debit cards. There could be a potential second-order impact on other payment forms such as credit cards and wallets since this step seems to promote ubiquity of the UPI," said Shivaji Thapliyal, lead analyst (institutional equities) at YES Securities. "Prima facie, this step seems negative for MDR fee-generating payment form factors".

However, to assuage these concerns, Das clarified that the issuance of debit cards would not stop due to the move since they have other uses beyond cash withdrawals, a sentiment also echoed by some industry stakeholders.

"Due to other intertwining dependencies built in the banking system for authorisation at call centres or Internet Banking and change of PIN for UPI, the issuance of debit cards may not reduce," said Anand Bajaj, the founder, MD & CEO of PayNearby.

What's next in the UPI pipeline?

It is projected that in the next 3-5 years, UPI would be processing a billion transactions a day, and to enable that, a number of initiatives have been introduced. Chief among these is UPI's AutoPay feature, which has already seen increased adoption owing to RBI's disruptive guidelines on recurring mandates. According to industry experts, the AutoPay feature will be crucial to increasing daily transactions on the platform.

The RBI has also announced UPI on feature phones without an Internet connection, which is expected to open up the payments system to more than 40 crore individuals who use such devices. This will expand digital financial inclusion and add to the number of transactions made on the platform.

WHAT DOES NPCI NOD TO WHATSAPP MEAN FOR INDIA'S UPI ECOSYSTEM?

Meta's instant messaging app WhatsApp has received clearance from the National Payments Corporation of India (NPCI) to add 60 million users to its UPI-based payments service WhatsApp Pay. This will take the total permissible number of users on the platform to 100 million. In a statement, Manesh Mahatme, director-payments, WhatsApp India said that the platform has planned significant investments in 'payments on WhatsApp' across India including – "India-first" features.

What does this mean for WhatsApp?

As a result of this clearance from NPCI, WhatsApp will be able to add 60 million users to its UPI service and take on heavyweight rivals such as Walmart-backed PhonePe and Google Pay, which command a majority of the transactions that happen on UPI. However, the NPCI has ensured that WhatsApp's ability to skew the level-playing field is limited given that the messaging app has over 500 million users and granting it permission to offer UPI service to all the users at once could impact competition. The company, on its part, though, is learnt to have asked NPCI's permission to expand its payments to all of its users without a cap. "Since our initial approval from NPCI, we have been working to deliver a simple, reliable and secure experience for WhatsApp users that we hope will accelerate adoption of UPI for the "next five hundred million" Indians," Mahatme said.

What does the move mean for other players in the UPI ecosystem?

The NPCI has mandated that no platform should handle more than 30 per cent of total transaction volumes of UPI on a three-month rolling period basis. However, for bigger players like PhonePe, which commanded a 49 per cent market share in terms of value of transactions in March and Google Pay, which had a 35 per cent market share, it has allowed them time until the end of 2022 to comply with the directive. So, even as these players could continue commanding a significant market share till the end of this year, the increasing clearance to WhatsApp and the mandate for the others to restrict their share could result in a less skewed market.

TRUST AND CREDIT

Co-operative banks in Kerala have reported high levels of non-performing assets at the end of December 2021. Figures released by the State Level Bankers' Committee (SLBC) suggest that as much as 88 per cent of advances of the Kerala State Cooperative Agricultural and Rural Development Bank Ltd were NPAs, while the corresponding figure for the Kerala Bank or Kerala State Cooperative Bank (KSCB), which has 13 district cooperative banks under it, is 30 per cent. These numbers are disturbing. The agriculture sector in Kerala, reeling under consecutive years of devastating floods, reported negative growth in 2019-20 and '20-21. This and the pandemic may have contributed to the rising NPAs.

But two other factors are also key: One, political control and patronage; and two, absence of regulation. In fact, both are connected. Much of the activity of the Kerala State Cooperative Agricultural and Rural Development Bank Ltd, with primary agricultural credit societies as basic units, escapes the oversight of regulators such as the RBI and the income tax department. Light regulation and lax supervison has benefited various stakeholders, including customers, promoters and underwriters, in this case the state government. Unlike public and private sector banks, cooperative institutions have the leeway to extend credit to local consumers, often on the basis of trust or compassion or due to pressure from local social or political groups. In the best scenario, they provide a protective net against usury and a compassionate helping hand in times of distress. In the worst scenario, these institutions become instruments in the hands of politicians to dispense privilege or to park black money. Last year, a cooperative bank in Karuvannur, Thrissur, controlled by local CPM leaders, had gone under after a loan scam was unearthed. The nexus between the promoters (the elected representatives of the cooperative) and their political patrons (parties) is not unique to Kerala: A similar pattern of political patronage is widespread in states such as Maharashtra and has often been the cause of banks going bust.

A case can be made for the state government to step in with necessary regulation and address the governance issues linked with the cooperatives. The cooperative sector has been a key player in mobilising and circulating capital in the state. The agricultural credit societies and cooperative banks enjoy high levels of trust among the people. It is essential that they build on that trust. These institutions are a lifeline for middle and lower middle classes and their financial health is of utmost importance to the state economy.

A MERGER TO BETTER MANAGE THE INDIAN RAILWAYS

A recent Gazette notification regarding the creation of the Indian Railway Management Service (IRMS) marks a paradigm shift in the management of one of the world's largest rail networks. Eight out of 10 Group-A Indian Railway services have been merged to create the IRMS. They are: Indian Railway Traffic Service (IRTS), Indian Railway Personnel Service (IRPS), Indian Railway Accounts Service (IRAS), Indian Railway Service of Electrical Engineers (IRSEE), Indian Railway Service of Signal Engineers (IRSS), Indian Railway Service of Mechanical Engineers (IRSME), Indian Railway Service of Civil Engineers (IRSE) and Indian Railway Stores Service (IRSS).

Through the UPSC

This marks one of the biggest bureaucratic transformations in India since Independence. A nearly 8,000 strong cadre of the erstwhile eight services is now merged into one.

Besides removing silos, this restructuring also aims at rationalising the top-heavy bureaucracy of the Indian Railways.

HITS AND MISSES: INDIA'S SOLAR POWER ENERGY TARGETS

The story so far: A report, jointly prepared by two energy-research firms — JMK Research and Analytics and the Institute for Energy Economics and Financial Analysis — says India will likely miss its 2022 target of installing 100 gigawatts (GW) of solar power capacity. This is because of rooftop solar lagging behind, the authors say.

What is India's solar policy?

Since 2011, India's solar sector has grown at a compounded annual growth rate (CAGR) of around 59% from 0.5GW in 2011 to 55GW in 2021. The Jawaharlal Nehru National Solar Mission (JNNSM), also known as the National Solar Mission (NSM), which commenced in January 2010, marked the first time the government focussed on promoting and developing solar power in India. Under the scheme, the total installed capacity target was set as 20GW by 2022. In 2015, the target was revised to 100GW and in August 2021, the government set a solar target of 300GW by 2030.

India currently ranks fifth after China, U.S., Japan and Germany in terms of installed solar power capacity. As of December 2021, the cumulative solar installed capacity of India is 55GW, which is roughly half the renewable energy (RE) capacity (excluding large hydro power) and 14% of the overall power generation capacity of India. Within the 55GW, grid-connected utility-scale projects contribute 77% and the rest comes from grid-connected rooftop and off-grid projects.

What does the report say?

As of April, only about 50% of the 100GW target, consisting of 60GW of utility-scale and 40GW of rooftop solar capacity, has been met. Nearly 19 GW of solar capacity is expected to be added in 2022 — 15.8GW from utility-scale and 3.5GW from rooftop solar. Even accounting for this capacity would mean about 27% of India's 100GW solar target would remain unmet, according to Jyoti Gulia, co-author of the report and Founder, JMK Research. A 25GW shortfall in the 40GW rooftop solar target, is expected compared to 1.8GW in the utility-scale solar target by December 2022. Thus, it is in rooftop solar that the challenges of India's solar-adoption policy stick out.

What are the reasons for rooftop solar adoption not meeting targets?

In December 2015, the government launched the first phase of the grid-connected rooftop solar programme to incentivise its use in residential, institutional and social areas. The second phase, approved in February 2019, had a target of 40GW of cumulative rooftop solar capacity by 2022, with incentives in the form of central financial assistance (CFA). As of November 2021, of the phase 2 target of 4GW set for the residential sector, only 1.1GW had been installed. The disruption in supply chains due to the pandemic was a key impediment to rooftop solar adoption.

In its early years, India's rooftop solar market struggled to grow, held back by lack of consumer awareness, inconsistent policy frameworks of the Centre/ State governments and financing. Recently, however, there has been a sharp rise in rooftop solar installations thanks to falling technology costs, increasing grid tariffs, rising consumer awareness and the growing need for cutting energy costs. These factors are expected to persist giving a much-needed boost to this segment, the report notes. Going ahead, rooftop solar adoption is expected to proportionally increase as land and grid-connectivity for utility solar projects are expected to be hard to come

by. Factors impeding rooftop-solar installation include pandemic-induced supply chain disruption to policy restrictions, regulatory roadblocks; limits to net-metering (or paying users who give back surplus electricity to the grid); taxes on imported cells and modules, unsigned power supply agreements (PSAs) and banking restrictions; financing issues plus delays in or rejection of open access approval grants; and the unpredictability of future open access charges, the report notes.

How critical is solar power to India's commitment to mitigate climate change?

Solar power is a major prong of India's commitment to address global warming according to the terms of the Paris Agreement, as well as achieving net zero, or no net carbon emissions, by 2070.

Prime Minister Modi at the United Nations Conference of Parties meeting in Glasgow, in November 2021, said India would be reaching a non-fossil fuel energy capacity of 500 GW by 2030 and meet half its energy requirements via renewable energy by 2030.

To boost the renewable energy installation drive in the long term, the Centre in 2020 set a target of 450GW of RE-based installed capacity to be achieved by 2030, within which the target for solar was 300GW.

Given the challenge of integrating variable renewable energy into the grid, most of the RE capacity installed in the latter half of this decade is likely to be based on wind solar hybrid (WSH), RE-plus-storage and round-the-clock RE projects rather than traditional solar/wind projects, according to the report. On the current trajectory, the report finds, India's solar target of 300GW by 2030 will be off the mark by about 86GW, or nearly a third.

The authors in fact speculate that that the government, in the short-term, will aggressively push for expediting solar capacity addition to achieve the 100GW target by 2022 by re-allocating some of the unmet rooftop targets to utility-scale projects.

TRAI MOOTS UP TO 40% SPECTRUM PRICE CUT

The Telecom Regulatory Authority of India (TRAI) on Monday recommended slashing the base price for airwaves by up to 40% across all spectrum bands, including 5G airwaves.

The telecom regulator has also suggested that all available spectrum in the existing bands — 700 MHz, 800 MHz, 900 MHz, 1800 MHz, 2100 MHz, 2300 MHz, 2500 MHz — should be put up for auction, along with airwaves in new bands such as 600 MHz.

The DoT, in a letter to TRAI in November last year, had emphasised on the need to strike a balance between generating revenue and the sustainability of the telecom sector in a way that telecom service providers are in good health with sufficient capacities to make regular and substantial capital expenditure for transitioning to 5G technology. It had also highlighted that only 37.1% of the spectrum put up in the previous auction was acquired by telcos and spectrum lying idle was a 'waste for the economy'.

"The inputs received by the Authority during the consultation process also point to the need for further rationalisation of the reserve price," the regulator said on Monday.

TRAI recommended the slashing of reserve prices across all spectrum bands by up to 40% for a 20-year period compared with the base price suggested in its previous recommendations.

For 5G airwaves in the 3300-3670 MHz band, all-India reserve price comes to ₹317 crore/MHz, lower by 35.5% from the ₹492 crore/MHz recommended earlier. Similarly, the reserve price for the premium 700 MHz band, which saw no takers in the previous auction, had been cut by 40% to ₹3,927 crore/MHz.

Previous auctions

In the last auctions held in March 2021, a total of 2,308.80 MHz spectrum worth ₹4,00,396.20 crore in reserve price was put to auction, out of which 855.60 MHz was sold resulting in total winning bids worth ₹77,820.81 crore. No bids were received for the 700 MHz and 2500 MHz bands.

The regulator also suggested that the reserve price of spectrum allocation for 30 years should be equal to 1.5 times the reserve price of spectrum allocation for 20 years, for the respective bands. "For the long-term growth and sustainability of the sector, infusing liquidity and encouraging investment, telecom service providers should be allowed easy payment options including part payment with flexibility of moratorium."

Further, for ease-of-doing business, easy and transparent spectrum surrender guidelines with a surrender fee of ₹1 lakh per spectrum band per licensed service area has been recommended. It also suggested that for the uptake of 5G use cases, a 5G-dedicated Inter Ministerial Working Group should be formed.

WHY LEMONS ARE SO COSTLY NOW

Over the last few weeks, the price of lemon has touched unprecedented highs, with a single lemon retailing between Rs 10 and Rs 15 in most markets. A look at how much lemon is grown in the country, what has led to the price hike, and where the prices could possibly be headed:

How much lemon is grown in the country, and where?

The fruit is grown in orchards spanning a combined 3.17 lakh hectares across the country. Lemon trees flower and give fruit three times a year. Andhra Pradesh is the largest lemon-growing state with 45,000 hectares under the fruit. Maharashtra, Gujarat, Odisha and Tamil Nadu are the other major lemon-growing states.

What is known as nimbu in Hindi comes under two broad categories: lemon and lime. The small, round and thin-skinned kaagzi is the mostly commonly grown variety in the country. Lime, on the other hand, refers to the dark green fruits that are grown commercially in North India and the Northeast, with varieties such as the gondhoraj in West Bengal being locally well-known.

Annually, India produces over 37.17 lakh tonnes of the fruit, which is consumed domestically. The fruit is neither exported or imported.

A warm, moderately dry and moist climate is the most suitable for the fruit, with heavy rainfall inducing bacterial diseases in orchards. Plants are grown through grafting, with the Nagpur-headquartered ICAR Central Citrus Research Institute (CCRI) and various state agricultural institutes maintaining quality root stocks. Farmers normally plant 210-250 lemon trees on an acre, and orchards yield their first harvest after three years of planting. On an average, a single tree yields around 1,000-1,500 fruits.

The price of lemons in some cities on Wednesday

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

Telegram: http://t.me/DreamIAS_Jamshedpur

What is the fruit's cycle?

Farmers supply the fruit round the year by inducing flowering through what is known as the 'bahar treatment', said Dr A A Murkute, principal scientist for the CCRI. In this treatment, farmers withhold irrigation and spray chemicals, prune the orchards, and then resume fertiliser treatment and irrigation, which subsequently leads to flowering and thus to fruit formation.

Lemon growers take three bahars in a year — known as Ambe, Mrig and Hasta, and named based on the season when the flowering is induced. During the Ambe bahar, flowering starts in January-February with fruit formation happening from April. During the Mrig bahar, orchards bloom during June-July, and the harvest happens in October. The Hasta bahar involves flowering in September-October, with harvest happening post March. These bahars overlap, and thus farmers have fruit round the year to market.

Dr Murkute said almost 60% of the crop that feeds the market is harvested from the Ambe bahar, while the Mrig bahar contributes 30% and the Hasta bahar the rest. Most of the Mrig bahar fruit is initially sent to cold storage, while fresh fruits from the other two bahars are retailed.

How much have prices risen?

In Pune's wholesale market, a 10-kg bag of lemon is selling at Rs 1,750 at present. A 10-kg bag normally contains 350-380 lemons, so the price of a single lemon now costs Rs 5. The retail price of a single lemon in Pune is around Rs 10-15. This, traders say, is the highest ever price the nimbu has ever commanded in this market, and it is mainly due to extremely low arrivals. Pune's market normally reports around 3,000 bags of 10 kg each, but now the arrivals are barely 1,000 bags.

In markets such as Mumbai, Hyderabad, Kolkata, the fruit is selling at wholesale rates of Rs 120, Rs 60, and Rs 180 respectively per kg, up from Rs 100, Rs 40 and Rs 90 a kg a month ago.

One of the main reasons is the failure of the Hasta bahar and the subsequent Ambe bahar. Across the country, the monsoon was exceptionally good last year, but the months of September and October had brought exceptionally heavy rains. Lemon orchards are extremely sensitive to excess moisture and thus, due to the heavy rainfall, the bahar treatment failed and flowering did not happen. This fruit is normally kept in cold storage and marketed until the next fruit from the Ambe bahar arrives. Due to a significantly lower harvest this time, farmers had lower yields to store.

The Ambe bahar fruit also suffered from unseasonal rain, with farmers reporting a drop in flowering during the initial phases. Since the end of February, soaring temperatures too have hit the crop, causing the younger fruits to drop off. For the summer, when the demand for lemon hits an all-year high, the stored Hasta bahar and fresh Ambe bahar fruits feed the market. But the double whammy has hit production.

Farmers and traders said this would be the one of the rarest years when two consecutive bahars have failed. Across the country, prices of lemon have crossed record high levels due to the low arrivals.

Chances of an immediate price correction are dim, with traders ruling out any immediate improvement in arrivals. The next crop that can be expected to reach the market will be ready only after October, and only then would arrivals improve significantly. At present, some arrivals from the Ambe bahar are expected from areas where the flowering has not been hit to a large extent. Even that arrival, however, is not expected to be enough to meet the demand.

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LIFE & SCIENCE

W BOSON MASS LESS THAN EXPECTED: STUDY

The grand explanation physicists use to describe how the universe works may have some major new flaws to patch, after a fundamental particle was found to have more mass than scientists thought.

"It's not just something is wrong," said Dave Toback, a particle physicist at Texas A&M University and a spokesperson for the U.S. government's Fermi National Accelerator Lab, which conducted the experiments. If replicated by other labs, "it literally means something fundamental in our understanding of nature is wrong."

The physicists at the lab crashed particles together over ten years and measured the mass of 4 million W bosons. These subatomic particles are responsible for a fundamental force, and they exist for only a fraction of a second before they decay into other particles.

The difference in mass from what the prevailing theory of the universe predicts is too big to be a rounding error or anything that could be easily explained away, according to the study by a team of 400 scientists from around the world published in the journal Science. If confirmed by other experiments, it would present one of the biggest problems yet with the standard model of particle physics.

The standard model says a W boson should measure 8,03,57,000 electron volts, plus or minus six. "We found it slightly more than that," said Giorgio Chiarelli, scientist for the Fermi team and research director for the Italian National Institute for Nuclear Physics.

Scientists have long known the standard model isn't perfect. It does not explain dark matter or gravity well.

UNDERSTANDING SOFTWARE COPYRIGHT AND LICENCES

Does software have copyright? Even more specifically, is the Internet free inspite of software copyright? Are software programming languages free of cost? How does copyright apply to software?

Software licensing

A copyright gives a creator the legal right to own, distribute and profit from his or her creative work. Software, like any other technology has all shades of licences facilitating its use. On one end of the spectrum, there is proprietary software which is to be purchased as a one-time transaction or as yearly licences. A popular example is Microsoft Windows which is purchased along with the computer or Microsoft Office which typically has a yearly licence that has to be renewed upon payment.

On the other hand, there are different kinds of software licences that allow free use of software. There is the Creative Commons licence (CC) which is public domain: any software or work that is in CC can be used and distributed free of cost. For example, Wikipedia is under CC and hence its contents can be used freely with the condition that attribution is made to Wikipedia (this is called 'Creative Commons – Attribution-ShareAlike).

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Another form of free software licence is Permissive Software licence which is popular in the software developer community and in the commercial world. This licence allows free use and modification of software. There are further specific licences under this category, like the Apache licence and MIT licence. The Apache licence is maintained by the Apache Software Foundation which is a non-profit entity. Many popular and powerful softwares like Spark (used in Big Data) have been developed under Apache licence. MIT licence is maintained by the Massachusetts Institute of Technology and it covers hundreds of software packages including GitLab and Dot NET.

Open software

All free and permissive software licences are similar to Free and Open Source Software (FOSS), a set of rules and free software brought under one umbrella in the 1980s by Richard Stallman, a famous computer scientist and activist. FOSS maintains its own licence, called GNU GPL (Gnu's Not Unix General Public Licence) to govern and distribute free software but it comes with restrictions that its adoption and modification be for free use.

In the software community, 'open source' means any of the above non-proprietary licences. Open source software packages are developed and maintained by programmers from around the world. Until the mid-1990s, the idea of the general public collaborating to create software for free seemed to be unrealistic and confined to small, elite communities. However, with the success of a free operating system like Linux (which is under GNU GPL licence), many were convinced that open source could create sophisticated solutions because of access to top programmers around the world.

Proprietary software also has its own place. Many software companies release certain generic portions of their software under open software licences but keep the critically important ones under proprietary licence. Companies like Google and Meta (Facebook) have made significant open source contributions to software packages on artificial neural networks and machine learning, after a few years of using them within their organisation and perfecting them.

Is the Internet free?

Going back to our original question, does internet involve copyright payment? To access and to create content on the internet, there are costs involved such as infrastructure costs like network and the cost to host and maintain the content.

However, the core of the internet itself is free: it is free to use ideas like linking contents on the internet, transferring them with a network software protocol and adopting the associated standards like maintaining the website address (Uniform Resource Locator-URL).

The core software packages that implement these ideas are made available to everyone for free, thanks to the foresight of Sir Tim Bernes-Lee who conceived of the key concepts behind the internet between 1989 and 1991 (the first web page was launched in 1990) and was one among the internet pioneers.

Now to the other question: are programming languages free of cost? Until the 1980s, popular programming languages had a price but with the advent of Java in the 1990s and thanks to the initiatives of Richard Stallman and his Free Software Foundation in the 1980s, many languages, especially modern ones like Go or popular ones like Python are free. Java is somewhere in the middle where there are free implementations of the language that most software developers use

but there are also paid implementations provided by Oracle. In general, the realisation in the software community is that a free language has widespread adoption and leads to the availability of an expert pool of programmers.

CODE RED

The story so far: In its latest assessment report, the Intergovernmental Panel on Climate Change (IPCC) has laid out several scenarios on the steps that ought to be taken to keep temperatures below 2°C. It warned that even temporarily exceeding the warming level of 1.5°C over the next two decades would mean additional severe impact, some irreversible.

How is this report prepared?

Scientists from around the world including India are part of the Working Group III of the IPCC. They analyse the various interventions that can be made to ensure that temperature rise by the end of the century is minimal. The group does this by assessing the most credible, updated literature on the scientific, technological, environmental, economic and social aspects of mitigating the impact of climate change. This specific group studies social developments, such as decisions taken at the annual Conference of Parties (COP), progress on clean energy technologies and availability of finance. Placing the data in the context of climate science, the scientists analyse the role played by various groups such as forest communities, indigenous tribes and businesses, in addressing climate change and finally recommend steps that must be taken over three periods: until 2030, until 2050 and until 2100, on what needs to be done to limit temperature rise. A key part of the report, called the Summary for Policymakers, was approved by 195 member-governments of the IPCC, through a virtual approval session that started on March 21. The latest report is the third instalment of the IPCC's Sixth Assessment Report (AR6), which will be completed this year.

What are the key messages?

Total net anthropogenic GHG (greenhouse gas) emissions have continued to rise from 2010–2019, as have cumulative net CO2 emissions since 1850. Average annual GHG emissions during 2010-2019 were higher than in any previous decade, but the rate of growth between 2010 and 2019 was lower than that between 2000 and 2009. By 2019, the largest growth in absolute emissions occurred in carbon dioxide from fossil fuels and industry followed by methane. The per-unit costs of several low-emission technologies have fallen continuously since 2010, however innovation has lagged in developing countries due to weak enabling conditions. Even if countries adhered to their promises towards reducing emissions, called Nationally Determined Contributions, warming will still exceed 1.5°C during the 21st century. Keeping warming below 2°C would then rely on a rapid acceleration of mitigation efforts after 2030.

Tracked financial flows were still falling short of the levels needed to achieve mitigation goals across all sectors and regions. The challenge of closing gaps was largest in developing countries as a whole. Increasing financial flows can be supported by clear policy choices and signals from governments and the international community, it said. According to the scientists, limiting warming to around 1.5°C requires global greenhouse gas emissions to peak before 2025 at the latest and be reduced by 43% by 2030; at the same time, methane would also need to be reduced by about a third. Even if this happened, it is almost inevitable that this ceiling would be temporarily breached but, with appropriate action, it could again dip by the end of the century.

The global temperature will stabilise when carbon dioxide emissions reach net zero. For 1.5°C, this meant achieving net zero carbon dioxide emissions globally in the early 2050s; for 2°C, it is in the early 2070s. Even limiting warming to around 2°C would still require global greenhouse gas emissions to peak before 2025 at the latest and be reduced by a quarter by 2030, the report stressed.

What are the implications of this report for India?

The report's warning against opening new coal plants is of relevance to India. The panel finds that all coal-fired power plants, without the technology to capture and store carbon (CCS), would need to be shuttered by 2050 if the world aspired to limit global temperature rise to 1.5°C. According to the Central Electricity Authority, India had about 211 GW of operational coal-fired power plants — roughly 10% of global capacity. As per Global Energy Monitor data, another 31 GW was being constructed and about 24 GW in various pre-construction phases. None of the existing under construction coal-fired power plants in India have CCS facilities. India has committed to a net-zero year, or when it would cease to be a CO2 emitter, of 2070 and has defined a pathway to transition to renewable energy sources but also insisted on its right to coal use given its developmental needs as well underlining that the historical responsibility of climate change from fossil fuel rested with the developed countries, who needed to shoulder much of the mitigating burden. The Centre has "welcomed" the report and said it recognises India's position that developed countries must do more to mitigate climate change.

THE FOOD VACCINE AS RIGHT, MORE SO FOR TB PATIENTS

In the past, there was a belief that every ill had a pill and the pill killed the germs that made you ill. That germ could be a bacteria, virus or a parasite. Factors such as genetic and metabolic causes, hormonal imbalance and altered neuro-chemical transmitters causing illnesses were less known then. But there was fairly good knowledge of how good air and nutrition reduced consumption illnesses such as tuberculosis (TB).

History and a perspective

This is why sanatoriums/sanatoria were set up in mountain terrain, with fresh air, pure water and good food, in the quest for a cure for TB. There were no drugs for TB till the discovery of streptomycin in 1943. With improved wages, better living standards and the accompanying higher purchasing power for food, the TB mortality rate came down from 300 people per 1,00,000 population to 60 in England and Wales. TB disappeared from socio-economically developed countries long before the advent of chemotherapy. After the Second World War, in 1946 G.B. Leyton reported a 92% reduction in the incidence of TB among British soldiers who were fed an additional Red Cross diet of 1,000 calories plus 30 grams of protein when compared to Russian soldiers who were fed only a camp diet. This historical importance of good nutrition was ignored by the modern therapist who tried to control TB initially with streptomycin injection, isoniazid and para-aminosalisylic acid. In the ecstasy of finding antibiotics killing the germs, the social determinants of disease were ignored.

Not patient-centric

With more drug arsenals such as rifampicin, ethambutol, pyrazinamide, the fight against TB bacteria continued, which became multidrug resistant. Sharper bullets were fired into the frail body of patients. It was bacteria targeted, not patient-centric. The regimes and the mode of

delivery of drugs were changed to plug the loopholes of alleged "non-compliance of illiterate and irresponsible patients". Blister packs of a multi-drug regime were provided at the doorstep, and the directly observed treatment/therapy (DOT) mechanism set up. There was little done to try to understand where patients lived, what work they did for a living, how much they could afford to buy food, and how much they ate.

Many of the poor discontinued blister-packaged free drugs thinking that these were "hot and strong" drugs not suited for the hunger pains they experienced every night. They coughed up virulent bacteria from their emaciated body to infect many around them. It is no wonder that TB was never brought under control.

The fact is that 90% of Indians exposed to TB remain dormant if their nutritional status and thereby the immune system, is good. When the infected person is immunocompromised, TB as a disease manifests itself in 10% of the infected. India has around 2.8 million active cases. It is a disease of the poor. And the poor are three times less likely to go for treatment and four times less likely to complete their treatment for TB, according to WHO, in 2002. Scientists like Rudolph Virchow (before 1902), Sir William Osler (before 1919) and Dr. Dubos (from 1960) have been saying the same thing.

The work and the findings of a team at the Jan Swasthya Sahayog hospital at Ganiyari, Bilaspur in Chhattisgarh established the association of poor nutritional status with a higher risk of TB. In the period 2004-09, among the 1,695 pulmonary TB patients they treated, men had an average body weight of 42.1 kg and a body mass index (BMI) of 16. For women, the average body weight was 34.1 kg and a BMI of 15. With these levels of undernutrition, there was a two to four-fold rise in the mortality associated with TB.

In 2014, research led by Dr. Anurag Bhargava (professor of medicine) showed that undernutrition in the adult population was the major driver of India's TB epidemic. Subsequently, the central TB division of the Ministry of Health came up with a "Guidance Document – Nutritional Care and Support for Patients with Tuberculosis in India" after a national workshop held in February 2016 at Yenapoya Medical College, Mangaluru, Karnataka. The 2019 Global TB report identified malnutrition as the single-most associated risk factor for the development of TB, accounting for more cases than four other risks, i.e., smoking, the harmful use of alcohol, diabetes and HIV.

Beginning with the JSS, a number of organisations began providing eggs, milk powder, dhal, Bengal gram, groundnuts and cooking oil to diagnosed patients along with anti-TB drugs. Chhattisgarh also initiated the supply of groundnut, moong dhal and soya oil, and from April 2018, under the Nikshay Poshan Yojana of the National Health Mission, all States began extending cash support of ₹500 per month to TB patients to buy food; this amount needs to be raised. Without simultaneous nutrition education and counselling support, this cash transfer will not have the desired outcome.

'Syndemics'

According to Dr. Bhargava, "undernutrition and TB" are "syndemics", and the intake of adequate balanced food, especially by the poor, can work as a vaccine to prevent TB. This vaccine is "polyvalent, acting against many gastrointestinal and respiratory tract infections; orally active, that can be produced in the country without patent rights; dispensed over the counter, without prescription and without any side-effects; safe for children, pregnant and lactating women, and of guaranteed compliance because it brings satisfaction and happiness".

The food vaccine is a guaranteed right for life under the Constitution for all citizens, more so for TB patients. Thus, the goals of reducing the incidence of TB in India and of reducing TB mortality cannot be reached without addressing undernutrition.

THE KEY PHRASE IS 'FOCUS ON THE FOETUS, FOR THE FUTURE'

The novel coronavirus pandemic has been an eye-opener to all about what a widespread, global public health issue looks like. Drawing an analogy from this communicable disease pandemic, one would be better placed to fathom the range and the depth of another pandemic — a silent 'pandemic of non-communicable diseases' (NCDs), i.e., diabetes and related conditions such as obesity, hypertension and heart disease, sweeping across the world, rapidly yet steadily over the last few decades.

The global burden

To illustrate the global burden of NCDs, let us use the example of diabetes mellitus. Diabetes is a disease characterised by a sustained increase in blood sugar ("hyperglycemia") that eventually affects the blood vessels in the body causing damage of various vital organs that include the heart, eyes, kidneys, nerves and brain. In the year 2021, the prevalence of diabetes was estimated by the International Diabetes Federation (IDF) to be 537 million people. On extrapolating the data to the year 2045, it is safe to say that almost 783 million people will be living with diabetes. In addition to this, for every person who is known to have diabetes, there is another person whose diabetes has yet to be detected. Further, a number of people live with what is called 'pre-diabetes', which is the penultimate stage before overt diabetes.

There is a saying in Tamil that one should not search for the origin of a sage and the headwaters of a river. But, in the case of diabetes and other NCDs, we have no other option but to fervently search for the sage and the headwaters before the world faces a deluge.

While several reasons can be ascribed for this rising trend — these include an aging population, urbanisation, genetic predisposition, nutrition and lifestyle transition — there is one factor that has not yet received due attention, namely, diabetes that occurs during pregnancy. Pregnancy-related diabetes encompasses both newly detected diabetes during pregnancy (or 'gestational diabetes') as well as women with pre-existing diabetes (or 'pre-gestational diabetes'). For the sake of simplicity, we will use the broader term 'Hyperglycemia-in-Pregnancy (HIP)' that covers both. The global prevalence of HIP is 16.7% of all live-births. In India, one out of four live-births is complicated by HIP.

A programming

In the 1980s, the British physician and epidemiologist, Prof. David Barker, put forward his hypothesis of "fetal origins of adult disease". Prof. Barker stated that a man's susceptibility to many of the adult-onset diseases had already been programmed while he was still an unborn, developing baby ("foetus") inside his mother's womb. In this intra-uterine (inside the womb) programming, any adverse stimulus — say an increased blood sugar level in case of maternal diabetes — permanently affects the structure, the functioning and the metabolism of the developing human body at the cellular and tissue levels, thereby predisposing the individual to disease in adult life.

Furthermore, the pancreas of the foetus (which secretes the hormone insulin), is able to respond to the maternal blood-sugars present in the blood that go to the foetus. In case the blood sugar

levels are increased, the fetal pancreas secrete excessive insulin, which in turn deposits fat in the growing foetus, sometimes even resulting in a 'big baby'. When this adversely programmed child grows up, he is faced with an unhealthy environment of high caloric foods, lesser physical activity and stress. At this point of time, the trigger of the gun loaded inside the womb is pulled by the environment. Eventually, the child develops diabetes or pre-diabetes. He also becomes prone to other related NCDs such as hypertension and heart disease.

Transgenerational effects

The claws of HIP extend even more to reach future generations. The offspring, when an adult, might transmit unfavourable genetic and epigenetic effects to the next generation. If the offspring were a girl, she is also prone to develop pregnancy-related diabetes, adding additional adversity for her progeny. Thus, a vicious cycle is established. Hyperglycemia begets hyperglycemia; diabetes begets diabetes and the vicious cycle goes on. All of this started at one point — when a woman developed HIP sometime earlier!

A major strategic point for checkmating diabetes and other NCDs lies at the intra-uterine level. To achieve this, action should commence well before conception. In a woman with pre-existing diabetes, blood sugar values need to be maintained closer to normal levels prior to conception. She should also maintain a healthy weight. The first trimester in pregnancy is a critical period when the organ systems of the body begin to form. If any perturbation occurs at this stage, the damage is likely to persist for life. If such a perturbation could be thwarted, say by achieving good blood sugar control in the mother, the risk of future NCDs in the offspring could be minimised. Therefore, the need is that pregnant women should be screened for diabetes at their very first visit to a maternity clinic. The present recommendation by the 'Diabetes-in-Pregnancy–Study Group of India' (DIPSI) lays emphasis on testing for diabetes in 'all pregnant women' from the 'early weeks of pregnancy'. Once HIP is detected, further management by medical nutrition therapy — and if needed, insulin therapy — is done.

DIPSI, led by its founder-patron, Prof. V. Seshiah from Chennai, has established a 'single-test approach' wherein a pregnant woman is subjected to a single glucose-load by mouth and blood sugar is tested after two hours. Here, the pregnant woman need not be fasting to undergo the test. This test has been approved and adapted by the Government of India in its National Health Mission.

A window of opportunity

The time around conception offers a great window of opportunity to optimise metabolic status in all women in the reproductive age group. The health of offspring and of further generations depends upon the metabolic health of the pregnant woman. Targeting pregnancy-related diabetes and breaking the vicious cycle of transgenerational transmission is a wholesome action to significantly bring down the expanding burden of diabetes and other NCDs.

In recognition of his numerous contributions to the field of pregnancy-related diabetes in India and around the world, the Government of India has declared the birthday of Prof. Seshiah, which falls on March 10, as "National Gestational Diabetes Mellitus Awareness Day". Furthermore, Prof. Seshiah was conferred the Padma Shri in the field of medicine (as a part of the Republic Day honours this year). At this juncture, it is wise to reiterate his words on the prevention of NCDs in the community, i.e., "Focus on the Foetus, for the Future".

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WHY ARE COVID-19 VACCINE SHOTS ADMINISTERED INTO THE UPPER ARM?

Almost everyone vaccinated for Covid-19 over the last 16 months will remember that he or she received a quick prick in the upper arm. This is because most vaccines, including those for Covid-19, are most effective when administered through the intramuscular route into the upper arm muscle, known as the deltoid, experts say.

Why are vaccines generally administered into muscle?

There are several reasons, but the most important one is that the muscles have a rich blood supply network. This means whenever a vaccine carrying an antigen is injected into it, the muscle releases the antigen, which gets dispersed by the muscular vasculature, or the arrangement of blood vessels in the muscle. The antigen then gets picked up by a type of immune cells called dendritic cells, which function by showing antigens on their surface to other cells of the immune system. The dendritic cells carry the antigen through the lymphatic fluid to the lymph node.

"Through the course of research over the years, we have understood that the lymph nodes have T cells and B cells — the body's primary protector cells. Once this antigen gets flagged and is given to the T cells and B cells, that is how we start developing an immune response against a particular virus, which in this case could be any of the new viruses like SARS-CoV-2, the virus that causes Covid-19, or the previous viruses which we have been running vaccination programs for," said Dr Rahul Pandit, director of critical care, Fortis Hospital, Mumbai, and a member of the national Covid-19 task force.

The rich blood supply network also gives the muscles a protective mechanism. This means that additives to the vaccine, such as aluminium salts, do not lead to severe local reactions. "Conversely, if the vaccine is administered into the subcutaneous fat tissue [between the skin and the muscle], which has a poor blood supply, absorption of the antigen vaccine is poor and therefore you may have failed immune response; similarly, the additives which could be toxic, could cause a local reaction," said Dr Pandit.

The same thing could happen when the vaccine is administered intradermally (just below the outermost skin layer, the epidermis). Hence, the route chosen now for most vaccines is intramuscular.

Also, compared to the skin or subcutaneous tissue, the muscles have fewer pain receptors, and so an intramuscular injection does not hurt as much as a subcutaneous or an intradermal injection.

But why the upper arm muscle in particular?

In some vaccines, such as that for rabies, the immunogenicity — the ability of any cell or tissue to provoke an immune response — increases when it is administered in the arm. "If administered in subcutaneous fat tissues located at the thigh or buttocks, these vaccines show a lower immunogenicity and thus there is a chance of vaccine failure," said Dr Harshad Limaye, senior consultant, internal medicine, Nanavati Max Hospital, Mumbai.

"Since the dosage of the vaccine is small (0.5mm) and there is little possibility of severe swelling of the injection site, resulting in inconvenience, its administered in the arm," said Dr Limaye.

Numerous studies on the fat layer between the skin and muscle have found that in most adults (both men and women), the layers seem to be the thinnest around the deltoid muscle. "Although

the muscle mass in the gluteal area (the buttocks) is much more than in the deltoid, the fat layer is also larger, so to deposit the vaccine inside the muscle may need a longer needle. However, men tend to have a lesser fat layer near the upper arm muscle as compared to women, so women sometimes may need a longer needle to deposit the vaccine into the deltoid muscle," said Dr Pandit.

Why not administer the vaccine directly into the vein?

This is to ensure the 'depot effect', or release of medication slowly over time to enable longer effectiveness. When given intravenously, the vaccine is quickly absorbed into the circulation. The intramuscular method takes some time to absorb the vaccine.

Wherever a vaccination programme is carried out, it is carried out for the masses. To deposit the vaccine, the easiest route would be the oral route (like the polio vaccine). However, for other vaccines that need to be administered intravenously or intramuscularly (enabling wider field-based administration), the intramuscular route is chosen from a public health perspective over the intravenous route," said Dr Pandit.

Which vaccines are administered through other routes?

One of the oldest vaccines, that for smallpox, was given by scarification of the skin. However, with time, doctors realised there are better ways to vaccinate beneficiaries. These included the intradermal route, the subcutaneous route, intramuscular route, oral, and nasal routes.

"There are only two exceptions that continue to be administered through the intradermal route. These are the vaccines for BCG and for tuberculosis, because these two vaccines continue to work empirically well when administered through the intradermal route," said Dr Pandit.

WHODUNNIT?

It could have been an April Fool's joke or, perhaps, even a scene from a B-grade horror flick. In a dimly-lit street on a dark night, the police stop a car for driving without its headlights on. The car has no driver, no intention behind the wheel. Is it a ghost, a joke or part of an elaborate heist, a la Ocean's 11? In the age of Silicon Valley miracles, it could be all of the above — or none of them.

Earlier this month, the San Francisco police stopped a self-driving car, and a video of the incident recorded by a bystander went viral. The technology, of course, has been around for some years now – though not in widespread use by consumers. The offending vehicle (or is the AI that guides it, liable) is seen to be driving away from the cops.

But even if it hadn't, can it be held responsible? After all, just as tigers cannot commit murder and kangaroos have never been convicted of burglary, it is unlikely that a car without a driver can be charged with a traffic violation. Guilt, innocence and liability require a moral, sentient agent as their subject.

Apart from being the subject of a viral video, the offending car is an apt metaphor for the crimes and lack of punishment for the Silicon Valley tech giants behind such innovations. The conscience and culpability of companies are exported to the all-powerful algorithm – somehow, though, the profits seem to accrue only to the billionaires, who have set their sights, and wealth, on privatising the heavens. Misinformation, effects on mental health, even political coups of sorts have been laid

at the door of AI. Yet, for law enforcement — local, national and international — big tech is still just a driver-less car with no one to challan. A ghost, a joke and a marvel of technology.

PISCINE MATHS

A recent study by University of Bonn researchers (Scientific Reports) showed that cichlids, many of which are important food fishes, and sting rays can add and subtract numbers in the range one to five. They are found to be able to distinguish between small numbers of objects, like three and five, by just glancing at them.

The fish were taught to add and subtract in the following manner: They were first shown a group of geometrical objects, say, four squares. If the squares were coloured blue, it meant "add one" and if they were yellow it meant "subtract one". Following this, they were shown two pictures, one with five squares and the other with three squares. If the fish swam to the correct picture, they were rewarded with food, otherwise they were left alone. Over several such runs, the fishes learnt to associate blue colour with addition of one unit and yellow colour with the subtraction of one unit.

The researchers verified that the fish had indeed internalised the mathematics and not simply memorised the sequences by testing them with sums not shown to them earlier, for example, 3 + 1 and 3 – 1, and with objects of different shapes. Even in these trials, the fishes mostly got the sums right.

The researchers were impressed because the fish chose the right answer even when the four objects making up a "four" were not identical.

For example, the "four" could be made up of large and small circles or triangles of different sizes. So the fish were generalising the idea of four and doing some complex thinking.