



# CURRENT AFFAIRS FOR UPSC

14TH TO 19TH MAY 2023

DREAMIAS





## INTERNATIONAL

### THE LATEST CHINA-CANADA KERFUFFLE

#### The story so far:

On May 8, the Canadian government declared Chinese diplomat Zhao Wei “persona non grata,” for allegedly targeting a Canadian lawmaker critical of China’s human rights record. Hours later, China announced a “reciprocal countermeasure” by asking Jennifer Lynn Lalonde, a top diplomat in the Canadian consulate in Shanghai, to leave the country by May 13. Tensions soared with China saying it holds the “right to take further actions in response”, while Prime Minister Justin Trudeau put out a strongly worded statement, reiterating that Canada will not be intimidated.

#### What started the feud?

At the centre of the latest spat is a report from the Canadian Security Intelligence Service (CSIS). Earlier this month, The Globe and Mail added, to a series of media reports about growing Chinese interference in Canada, a report on an intel document from 2021 which detailed potential threats to opposition lawmaker Michael Chong and his family in Hong Kong over the latter’s criticism of Beijing. Citing an anonymous national security official as its source, the newspaper reported that Chinese consul Zhao Wei was involved in gathering information about Mr. Chong and his family in Hong Kong to target him over his anti-Chinese sentiments and for further sanctions — to “make an example” of him and “deter others from taking an anti-PRC position.”

In 2021, Mr. Chong led legislative efforts in Canada’s House of Commons to declare China’s treatment of Uyghurs and other minorities in Xinjiang as “genocide”. In response, Beijing barred his entry into China.

#### How did Canada react to the report?

After details of the CSIS report were revealed, the Canadian government was heavily criticised for its inaction against China. While Mr. Chong said that he was disappointed to find out about the risk to his family’s life from a newspaper, Mr. Trudeau claimed he was not made aware of the intel by the spy agency. Internal deliberations followed about the future course of action, seemingly to prepare for any economic repercussions since China is Canada’s second-biggest trade partner.

On May 8, Canada declared diplomat Zhao Wei “persona non grata” (Latin for an unwelcome person). In a statement, Foreign Affairs Minister Mélanie Joly said that Canada would “not tolerate any form of foreign interference in our internal affairs.” The Minister added that, “diplomats in Canada have been warned that if they engage in this type of behaviour, they will be sent home.”

China responded strongly, warning of retaliatory measures. In a statement, the Chinese Embassy in Ottawa said Zhao’s expulsion was “based on rumours of the so-called ‘China interference’ hyped up by some politicians and the media.” Terming the move a violation of international law which had sabotaged China-Canada relations, the Embassy maintained that China never interferes in other countries’ internal affairs.

Later, Chinese Foreign Ministry spokesperson Wang Wenbin urged Canada to stop “unreasonable provocations”. “If Canada does not listen to the advice and acts recklessly, China will fight back resolutely and forcefully, and the Canadian side must bear all the consequences arising from this,”



Mr. Wang said. Hours later, China issued an order asking Ms. Lalonde to leave the country by May 13.

#### **What has led to strained Canada-China ties?**

Diplomatic ties between China and Canada have been unsteady for the past few years, especially after Canadian police arrested Huawei Technologies executive Meng Wanzhou on charges of fraud in 2018. A few days after her arrest, China detained two Canadians on spying charges — a move then called “hostage diplomacy”. After years of a stand-off, all three were freed by their respective nations in 2021 after a deal was reached to release Ms. Meng.

During that period, China suspended imports of canola from Canada, alleging pests in the shipment. The ban was, however, lifted last year amid a global shortage of food in the wake of the Russia-Ukraine war. Since then, the rift has widened.

Canada alleged that the Chinese government attempted to interfere in the 2019 and 2021 federal elections — a charge Beijing vehemently denies. The two countries are also engaged in a technology battle. While Canada has limited the presence of Chinese firms in its communications infrastructure, Beijing believes the restrictions were imposed without any solid evidence.

The tension between the leadership was also visible at the G-20 summit in Indonesia last year, when Chinese President Xi Jinping and the Canadian PM exchanged barbs over leaked details of their meeting about Chinese interference in domestic affairs.

### **UK TO GIVE LONG-RANGE STORM SHADOW CRUISE MISSILES TO UKRAINE: WHAT ARE THEIR CAPABILITIES AND HOW THEY CAN HELP KYIV FIGHT AGAINST RUSSIA**

**Storm Shadow is a long-ranged, air-launched, conventionally armed, deep-strike missile, which is manufactured by the France-based MBDA Missile Systems. With a range of more than 250 km, it's capable of being operated day and night in all weathers and is designed to destroy high-valued stationary targets.**

The United Kingdom will provide long-range Storm Shadow cruise missiles to Ukraine, which it has been requesting in a bid to push back invading Russian forces, British Defense Secretary Ben Wallace told Parliament on Thursday (May 12).

The weaponry is the latest addition to the long list of military aid given to Kyiv by its Western allies. Ukraine has so far received a wide variety of weapons and ammunition, including anti-tank missiles, anti-aircraft systems and artillery, since Russia invaded it in February 2022.

President Volodymyr Zelenskiy, his military officers and other experts believe that the Storm Shadow missiles, each costing around £2 million, will give Ukrainian forces the ability to strike Russian military targets located well behind the front lines — especially in Crimea, which Moscow illegally occupied in 2014.

Speaking in the House of Commons, Wallace said, “Ukraine has a right to be able to defend itself”.

“The use of Storm Shadow will allow Ukraine to push back Russian forces based within Ukrainian sovereign territory.,” he added.

#### **What are the capabilities of long-range Storm Shadow cruise missiles?**



Storm Shadow is a long-ranged, air-launched, conventionally armed, deep-strike missile, which is manufactured by the France-based MBDA Missile Systems. It was first produced after the “UK Ministry of Defence (MoD) placed a €1.13bn contract with MBDA Systems for the development and production of the Storm Shadow long-range missile in 1997,” Airforce Technology said in its report.

The same year, France also commissioned MBDA to develop and manufacture Storm Shadow for its forces. The demand for the missile quickly rose as in the following years other countries like Italy and Greece placed orders for the missile.

With a range of more than 250 km, Storm Shadow weighs 1,300 kg and is 5.10m long. It’s capable of being operated day and night in all weathers and designed to destroy high-valued stationary targets such as airbases, radar installations, communications hubs and port facilities. The report by Airforce Technology mentioned that what makes this missile a stealthy weapon is the combination of its long-range, low altitude and supersonic speed.

Storm Shadow, equipped with the fire and forget technology, also offers high precision deep strike capability as it features a sophisticated navigation system that includes inertial navigation (INS), global positioning system (GPS) and terrain reference navigation for better control over the path.

“After launch, the weapon descends to terrain hugging altitude to avoid detection. On approaching the target, its onboard infrared seeker matches the target image with the stored picture to ensure a precision strike and minimal collateral damage,” the datasheet of Storm Shadow said.

The missile features the BROACH (Bomb Royal Ordnance Augmented CHarge) warhead — a high-technology warhead, which first cuts the surface of the target, penetrates into it and then explodes.

#### **Where has it been used?**

According to MBDA, Storm Shadow is operated from Eurofighter Typhoon, Rafale, Mirage 2000 and Tornado. “It is in service with the Royal Air Force, the French Air Force, the Italian Air Force and a number of export countries and has seen operational service in Iraq, Libya and Syria,” the company added.

#### **How could Storm Shadow help Ukraine fight Russia?**

Experts suggest Storm Shadow missiles could bolster Ukraine’s much anticipated counter-offensive. An analysis published in The Telegraph said owing to the long range of the weapon it would enable Ukrainian forces to strike targets virtually anywhere across Russia. Most significantly, however, the Ukrainians could use Storm Shadow to destroy the Kerch Bridge that connects Crimea to the Russian mainland.

“The Kerch Bridge is an important logistical node in Russian military planning and is critical to Russia’s resupply efforts in Ukraine’s southern Kherson region. Losing the bridge would constitute a major setback to Russia’s armed forces and an important symbolic defeat for Vladimir Putin,” it added.

### **WHAT IS ‘JERUSALEM DAY’ AND WHY IS IT AN ISRAELI-PALESTINIAN FLASHPOINT?**

Israeli nationalists marking the 1967 capture of East Jerusalem were to march through the Muslim quarter of the Old City on Thursday in an annual parade that Palestinians see as a provocation.



Here are details on “Jerusalem Day” and why it stirs fears of renewed violence:

### **What is Jerusalem Day?**

Israel fought a number of Arab armies in a 1967 war, during which it captured territories including East Jerusalem. The annual commemoration can draw crowds in the tens of thousands.

Israel has since annexed East Jerusalem, in a move that has not won international recognition, and regards the entire city as its eternal and undivided capital. Palestinians want East Jerusalem as the capital of a future state.

The day’s events culminate with a flag-waving march that cuts through downtown Jerusalem before entering the walled Old City, home to sites holy to Christians, Jews and Muslims.

In recent years, the parade has increasingly become a show of force for Jewish nationalists, and for Palestinians a blatant provocation meant to undermine their ties to the city.

### **Why has it caused tensions with Palestinians?**

The heavily-policed procession passes through the Old City’s narrow streets, including areas that are popular among Palestinians such as Damascus Gate and the Muslim Quarter, forcing some Arab shopkeepers to close down. In the past, it has included some acts of racist incitement and violence.

Another source of tension has been visits by large groups of Jewish pilgrims, including members of parliament, to the Al-Aqsa mosque compound. Al-Aqsa is the third holiest site in Islam that Jews revere as the Temple Mount, a vestige of two ancient temples.

Palestinians say the visits and police enforcement around them are an Israeli attempt to encroach on one of the few places in the city where they sense a degree of sovereignty.

Muslims say Jewish visitors are also increasingly violating a decades-old ban on non-Muslim worship on the compound. Israel says it prevents such prayer and maintains the status quo.

### **How has the event led to violence in recent years?**

During the 2021 march, the Islamist Hamas group fired rockets into Israel, helping spark an 11-day war that killed at least 250 Palestinians in Gaza and 13 people in Israel.

Hamas, which governs blockaded Gaza, has cast itself in recent years as a defender of Jerusalem’s Palestinians and Muslim holy sites. Ahead of Thursday’s march, it has warned of an “explosion” if right-wing marchers violate the status quo at the Al-Aqsa mosque compound or attack Palestinians.

This year, Palestinians have also organised their own flag marches in the Israeli-occupied West Bank and Gaza, with some processions set to take place only a few hundred metres away from the Israel-Gaza separation fence.

## **WEAKER BY THE YEAR**

Recep Tayyip Erdoğan was perhaps at the weakest moment of his two-decade-long reign when an overwhelming majority of Turkish citizens voted in Sunday’s presidential and parliamentary elections. Six Opposition parties came together to seize the momentum and fielded a joint

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candidate, Kemal Kılıçdaroğlu, a mild-mannered former bureaucrat who promised to arrest Turkey's "slide towards authoritarianism" and fix its economy. Most opinion polls predicted that Mr. Erdoğan was trailing Mr. Kılıçdaroğlu. Yet, in the preliminary results, Mr. Erdoğan won 49.5% of the votes in the presidential election, a tad lower than the threshold that would have avoided a run-off, against Mr. Kılıçdaroğlu's 44.9%. The President's nationalist-conservative coalition also took a comfortable majority in Parliament. Mr. Erdoğan was facing serious criticism, particularly about his mismanagement of the economy. Turkey's lira has lost some 60% of its value against the dollar in just two years. Foreign investors are fleeing and the current account deficit is ballooning. Annual inflation has hit the middle-class. After a devastating earthquake in February, the government's response to the calamity and its building permit rules were slammed. Yet, the Opposition failed to turn these challenges Mr. Erdoğan faced into votes.

Mr. Erdoğan, whose Islamist Justice and Development Party (AKP) came to power in 2003, has remained a towering figure in Turkey's politics. He rewrote its Constitution, turning its parliamentary system into an executive presidency, and got himself elected as the first President under the new Constitution. He used the failed 2016 coup to purge his rivals and tame the generals. He moved Turkey away from the western orbit and began building stronger ties with Russia and Arab countries, while retaining its NATO membership. His promise was to turn Turkey, once the core of the Ottoman Empire, into a major global power again. He presented himself as an outsider who revolted against the Kemalist establishment, and built a new order rooted in Islamist conservatism, public welfare and an Ottoman imperial nostalgia. Sunday's election results show that this revivalist brand of politics still remains powerful. But that is not the whole story. The results also suggest that there are cracks in his base. In 2018, he won the presidential election in the first round with a 22-percentage point lead over his closest rival. This time, he was not just forced to go into a run-off, but the gap is just five points. Public resentment towards his policies was particularly high in and around Ankara and Istanbul. A directionless Opposition finally seems united and potent. Mr. Erdoğan may still be in the lead, but he has been humbled by Turkey's voters.

#### THAILAND TO 'MOVE FORWARD'? STUNNING MANDATE FOR POLITICAL REFORM, BUT UNCERTAINTY AHEAD

Thailand's Move Forward and Pheu Thai parties won the most seats in Sunday's (May 14) election, Reuters reported. This paves the way for a challenge to a royalist-military status quo after nearly a decade since the coup of 2014.

Observers have called the result a "political earthquake", with voters overwhelmingly supporting political reform. Among key issues for voters were Thailand's strict laws against the criticism of the monarchy – both Move Forward and Pheu Thai have advocated for reform to these laws.

However, despite the resounding mandate against the status quo, Thailand still faces uncertainty, with the military holding the power to undermine the popular mandate.

Thailand has some of the world's strictest lese-majeste laws, which criminalise any criticism of the Thai monarchy. The vaguely-worded Article 112 carries a penalty of up to 15 years in jail and rights groups say it has been used to punish political activism.

The lower house of the Thai Parliament has a total of 500 seats – 400 open constituency seats and 100 'party-list' seats (seats won by parties based on their share of national votes). Sunday's election was for these seats.



But, to form the government, a political party (or coalition) must win a majority of the combined 750-seat lower and upper houses of parliament. Under Thailand's constitution, the 250-member senate is chosen entirely by the military. This means that the institution can still play a major role in deciding the government with the "winning" coalition falling well short of the 376-seat majority mark.

#### **Democracy, military rule and the monarchy in Thailand**

Though civilian rule was formally established in Thailand in 1992, the Thai military and monarchy remain pre-eminent institutions and have repeatedly hindered political reform.

Notably, Thailand has no tradition of civilian control of the military and the monarchy, which has enjoyed an exalted status among Thai citizens, operates without censure. Both the military and the monarchy have historically been tied together, supporting each other's interests.

Most recently, Thailand saw a bloodless coup in 2014. In 2017, a new constitution was ratified under military supervision, which allowed the military to appoint all 250-members of the Thai senate.

### **THE 'REFUGEE SCAM' THAT HAS TRIGGERED ARRESTS AND A SPECTACLE IN NEPAL'S PARLIAMENT**

An independent member of Nepal's Parliament, Amaresh Kumar Singh, took off his shirt and vest in the House in protest this week after he was not allowed to speak on an alleged illegal racket to send Nepali citizens to the United States as Bhutanese refugees.

A dozen people including the influential Nepali Congress leader Balkrishna Khand — who was Home Minister in the July 2021-December 2022 government of former Prime Minister Sher Bahadur Deuba — a former Member of Parliament, and a serving Secretary to Nepal's government, have been arrested in connection with the "refugee scam".

Reports in the media have pointed to a syndicate of politicians and government officials at the heart of the alleged human-trafficking ring.

#### **Refugees and racket**

For over three decades, Nepal has been home to more than 120,000 Bhutanese refugees, who left their country after Bhutan's government put certain restrictions on the religious and cultural practices — and even dress — of people of Nepali origin, in the 1980s.

India, where the refugees first reached, was not welcoming, and quickly pushed them to Nepal. This was in 1989, when India-Nepal relations had hit a trough after the Rajiv Gandhi government imposed an 18-month economic blockade on Nepal, ostensibly to punish it for buying weapons from China.

Over a decade from 1992 onward, Nepal and Bhutan held 15 rounds of talks on the repatriation of the refugees, which yielded no results. India refused to mediate, and asked its neighbours to sort out the issue between themselves.

At this stage, seven western countries — the US, Canada, New Zealand, the Netherlands, the United Kingdom, Norway, and Australia — agreed to take in a total 113,307 Bhutanese. After this process ended in 2019, a committee set up by the government of then Prime Minister K P Oli



recommended there were still 429 individuals who were eligible for third-country settlement, and that they should be issued refugee identity cards.

However, the alleged syndicate corrupted the list, targeting vulnerable individuals on it, and trying to inflate it by claiming many refugees had been left out of the resettlement process. Huge sums of money allegedly exchanged hands on the promise of a smooth flight abroad.

Despite several corruption scandals over the past decade and a half of loktantra, Parliament has rarely debated graft, or sought to hold the government accountable. However, the refugee scam was seen as devaluing Nepal's sovereignty itself, with protesters being called traitors.

Amaresh Kumar Singh, the independent lawmaker who took off his shirt in Parliament, had earlier alleged that Nepal was being run by "Pampha Devis", a reference to an allegation from three decades ago that the country's then Queen Aishwarya had stashed away money in Swiss banks in the fictitious name of "Pampha Devi".

#### **Political fallout**

The protests over the refugee scam has for the first time challenged the impunity that leaders in both government and opposition have traditionally enjoyed in the House. The scandal has become an emotive issue of nationalism, with the alleged traffickers — including politicians and bureaucrats — being seen as trading in human beings for financial gain.

Facing the heat, Prime Minister Pushpa Kamal Dahal 'Prachanda' on May 11 put on hold a licence to set up a private stock exchange in the country amidst allegations that the process may not have been entirely transparent. While Prachanda continues to put on a brave face over the trafficking scandal, he probably realises that the breach in the political arrangement of 'impunity to all' could ultimately see the floodgates being opened, with his own name featuring in several alleged scams. The probe into the refugee scam could trigger the beginning of many other investigations, which may threaten the political careers of top leaders of all major parties.

### **TWO DEAD IN SUNKEN CHINESE VESSEL; INDIAN NAVY DEPLOYS P-8I FOR SEARCH**

Two crew of the capsized Chinese deep sea fishing vessel are confirmed dead, the Chinese Ministry of Transport said on Thursday as a multinational effort is racing against time to locate the missing crew. The Indian Navy said that responding to a distress call from the fishing vessel Lu Peng Yuan Yu 028, it had deployed P-8I maritime patrol aircraft on May 17 for search and rescue (SAR) efforts in the southern Indian Ocean region, approximately 900 nautical miles from India.

The Australian Maritime Safety Authority (AMSA), which is coordinating the rescue effort in waters located around 5,000 km from Australia and 1,300 km south of Sri Lanka, said that they had identified a large area in the Indian Ocean where they will focus the search. The Australian Defence Force too has deployed a P-8A aircraft for the search.

### **WHO IS BUSHRA BIBI, WIFE OF EX-PAK PM IMRAN KHAN, CHARGED WITH CORRUPTION CASES?**

Bushra Khan, the wife of Pakistan's former Prime Minister Imran Khan, is facing corruption charges in the same case that led to his arrest on May 9. On Monday, he accompanied her to a court that granted her protective bail.





She is known for her spirituality and devotion to Sufism, a mystical form of Islam. Khan, 70, has often called Bushra his spiritual leader.

Born Bushra Riaz Watto, she changed her name to Khan after her marriage. Her husband and followers commonly refer to her as Bushra Bibi or Bushra Begum, titles that in Urdu denote respect.

She has kept a low profile since her marriage to Khan, a former cricket hero who has been in the public eye for decades.

#### **Mystic, secret marriage**

Both Bushra and ex-husband Maneka are devotees of Fariduddin Masud Ganjshakar, or Baba Farid, a revered Muslim mystic and Sufi saint whose shrine is located in Maneka's hometown of Pakpattan in Punjab.

Pakistanis who admire Bushra's devotion to the saint call her a spiritual leader while Khan's opponents accuse her of practicing sorcery, a claim Khan's aides have repeatedly denied.

In a rare interview, Bushra told local HUM news network in 2018 that "people would come to see me to get closer to God and the Prophet".

It was not clear when or how Khan met Bushra, but former aide Aun Chaudhry said Khan was very impressed with her spirituality. Khan, who had acquired a playboy image in the 1990s as his cricket career took off, has previously said he was keenly interested in Sufism.

Khan and Bushra married in 2018, seven months before he was elected prime minister, in a secret ceremony. The marriage was Khan's third after Jemima Goldsmith, daughter of business tycoon James Goldsmith, and TV journalist Reham Nayar Khan. Both these marriages ended in divorce.

**DreamIAS**



## NATION

### FIJI'S 1987 COUP: WHY DID PRIME MINISTER RABUKA APOLOGISE TO THE INDO-FIJIAN COMMUNITY?

Fiji's Prime Minister Sitiveni Rabuka Sunday apologised for his role in orchestrating the 1987 coup that overthrew the democratically elected government of then Prime Minister Timoci Bavadra, the first Indo-Fijian to lead the country.

"I make this confession on my own behalf and on behalf of all those who took part with me in the military coup on the 14th of May, 1987. We confess our wrongdoings, and we confess that we have hurt so many of our people in Fiji, particularly those of the Indo-Fijian community of the time and among them sons, daughters, grandsons and granddaughters of those who were indentured as labourers from India between 1879 and 1916," Rabuka said in the country's capital, Suva.

Rabuka, who was then an army lieutenant colonel, entered Fiji's parliament, arrested Prime Minister Bavadra, and suspended the constitution. The takeover, the first of several military coups in Fiji, was driven by indigenous Fijians' fear of losing political control to Indo-Fijians, who dominated the country's economy.

Rabuka's action had far-reaching and long-term consequences for Fiji, and altered its relationship with the rest of the world, especially India.

#### **Rabuka's second coup**

Widespread racial violence followed the military takeover, wrote academic Dr Amba Pande in an article published in *Strategic Analysis*, a monthly journal of Columbia University (*Race and Power Struggle in Fiji*). Pande wrote that an attempt by the governor-general to form an advisory council with both Bavadra and Rabuka failed after the ousted Prime Minister refused to participate "on the grounds that the composition of the council was unconstitutional and biased".

Following weeks of negotiations, in July 1987, plans to reform the constitution were approved, and it was decided that Bavadra and Kamisese Mara — a former Prime Minister popular with indigenous Fijians — would form an interim government.

In response, Rabuka orchestrated a second coup on September 25 of that year. He declared Fiji a republic, and proclaimed himself head of the state, replacing the Queen. Countries around the world condemned these actions and refused to recognise his regime, and India imposed trade sanctions on Fiji.

Under pressure, Rabuka resigned as head of state on December 6, 1987, and Penaia Ganilau became the first President of the Fijian republic. A new constitution was promulgated in 1990, and elections were held two years later.

#### **Background of crisis**

The election victory of the Indo-Fijians was only a trigger for Rabuka's coup. Since independence, the South Pacific Ocean archipelago had been seeing a widening political divide between ethnic Indians and indigenous Fijians.



Indians were brought to Fiji from 1879 onward as “giritiyas” or indentured labour transported to work in sugar plantations. The majority of these Indians stay back after the indenture system ended and, over time, gained prosperity. The Indian community eventually became the backbone of Fiji’s economic system, and they had, by the 1940s, outnumbered ethnic Fijians in the islands’ population.

Another reason for the Fijians’ resentment was the nature of landholdings. Indigenous Fijians owned more than 83% of the land on the islands, but Indian tenant farmers held most of it on 99-year leases, according to Pande’s article. “Despite the fact that the land was legally made inalienable by the constitution of 1970, the fear of losing it had always been there in the minds of the Fijians,” Pande wrote.

All these insecurities came to a boil after the general elections of 1987, and a section of indigenous Fijians sought to thwart Indo-Fijians from getting political power. Rabuka’s two coups triggered a massive wave of emigration — according to a report published by The Guardian in 2000, around 70,000 Indians fled the country to “escape the oppression”.

## TAHAWWUR RANA TO BE EXTRADITED TO INDIA: WHO IS THE PAKISTANI-CANADIAN 26/11 ATTACKS PLOTTER?

A US court has approved the Indian government’s request for the extradition of Tahawwur Rana, the Pakistan-born Canadian man who faces charges for his role in the 26/11 Mumbai terror attacks in 2008 and is known to be associated with David Headley.

“The Court has reviewed and considered all of the documents submitted... the Court makes the findings set forth below, and CERTIFIES to the Secretary of State of the United States the extraditability of Rana on the charged offences that are the subject of the Request,” wrote Judge Jacqueline Chooljian, US Magistrate Judge of the US District Court Central District of California, in a court order dated May 16 that was released Wednesday (May 17).

What exactly was Rana’s role in the attacks, his connection to David Headley and what has the Indian government argued? We explain.

### Who is Tahawwur Rana?

Rana, who is now 62 years old, was a childhood friend of Headley. Headley, a US citizen who was born to an American mother and a Pakistani father, was arrested in October 2009 by US authorities and sentenced to 35 years in prison for his involvement in the Mumbai attacks.

The US government said, “Headley was convicted of conspiracy to bomb public places in India; conspiracy to murder and maim persons in India; six counts of aiding and abetting the murder of U.S. citizens in India; conspiracy to provide material support to terrorism in India...” He was also part of a conspiracy to bomb a newspaper office in Denmark.

Rana studied at the Hasan Abdal Cadet School in Pakistan, which Headley too attended for five years. After a stint as a doctor in the Pakistan Army, Rana moved to Canada, and was eventually granted Canadian citizenship.

### What was Rana’s role in the 26/11 attacks on Mumbai?

Rana later went on to establish a consultancy firm called First World Immigration Services in Chicago, USA. It was a branch of this business in Mumbai that provided Headley with the perfect

**3<sup>RD</sup> FLOOR AND 4<sup>TH</sup> FLOOR SHATABDI TOWER, SAKCHI, JAMSHEDPUR**



cover to identify and surveil potential targets for the Pakistani terror group Lashkar-e-Taiba (LeT).

In the 26/11 attacks, on November 26, 2008, 10 LeT terrorists stormed into the financial capital of the country and for three consecutive days, the city of Mumbai was in the grip of terror. Major landmarks like the Taj hotel and the Chhatrapati Shivaji Terminus railway station were attacked. The violence claimed the lives of 166 people, including foreigners. Pakistani nationals who carried out the attacks reached India via boats, it was later found.

During court hearings, the US government attorneys argued that Rana was aware that Headley was involved with the LeT and that by assisting him and affording him cover for his activities, he was supporting the terrorist organisation and its associates.

Rana was arrested by American police soon after Headley's arrest at Chicago's O'Hare airport in October 2009.

He was convicted in Chicago in 2011 of providing material support to the LeT for the India attack and for supporting the never-carried-out plot to attack a Danish newspaper named Jyllands-Posten that printed cartoons of the Prophet Muhammad in 2005. The plan (dubbed the "Mickey Mouse Project" by al-Qaeda) was in retribution for publishing a cartoon of Prophet Muhammad, but was never carried out.

However, jurors in the US cleared Rana of a more serious charge of providing support for the attacks in Mumbai.

Rana's lawyer said he had been duped by his high school buddy Headley, who plotted the attacks. The defense called Headley the government's chief witness, who testified to avoid the death penalty, a habitual liar and manipulator.

They said that while the men had been old friends, Headley had a history of selling out friends and associates in order to escape with light prison sentences. The US government's Department of Justice also noted in 2013 that Headley's cooperation with authorities was a factor in why he was not sentenced to life imprisonment.

It was Headley's testimony as a government witness at Rana's trial in Chicago that led to Rana being sentenced to 14 years in prison, followed by five years of supervised release. In 2013, Headley entered into a plea bargain with prosecutors in exchange for a reduced 35-year sentence, but Rana did not.

#### AMONG THE ELITE

As he left for Japan on Friday to attend the G-7 summit — India is a special invitee — Prime Minister Narendra Modi called India's attendance "particularly meaningful" this year. While Mr. Modi was referring specifically to India's G-20 presidency, and aligning the G-20 agenda with Japan's agenda for the G-7 summit is key, there are other reasons for India's presence to stand out at the conversations this weekend. Japan, as host, has taken a fairly tough position on Russia, with its envoy to India saying that the "message to Putin" must be that Russia will have to "pay" for its war in Ukraine. While all G-7 countries — the U.S., the U.K., Canada, France, Germany, Italy, Japan and the EU — are united in their efforts to sanction Russia further, it will be left to India, which has walked a line of fine balance thus far, to temper some of that language, particularly if joint communiqués are sought with the outreach countries including South Korea, Australia, Brazil,



Vietnam, Indonesia, Comoros and the Cook Islands. Neither Russia nor China, the “elephants in the room”, are actually invited, and India’s position will be all the more important for the “Voice of the Global South” that Mr. Modi has committed to amplify, in conversations about the impacts of sanctions imposed by the G-7 countries on the developing world, including on food, fertilizer and energy security. Ukrainian President Volodymyr Zelenskyy has decided to accept Japan’s invitation to attend the G-7 summit in person, and all eyes in India will be on a possible meeting between him and Mr. Modi, which would be a first since the Ukraine war began. The G-7 countries will keenly watch whether Mr. Modi extends an invitation to Mr. Zelenskyy to address the G-20 summit in September.

Apart from the Russia-Ukraine tussle, India will be at the forefront as G-7 and G-7+ countries discuss debt sustainability and helping countries such as Sri Lanka to avoid a “debt trap”. It will also be a key speaker on issues such as building supply chain reliability, spearheading alternative energy coalitions, and seeking infrastructure and development aid in the region. Finally, India’s unique voice, as a nuclear power that is not a member of the Non Proliferation Treaty regime, yet has built an impeccable record in nuclear restraint, will be heard as Japan seeks to send a united message on non-proliferation from Hiroshima which was devastated by an American atomic bomb in 1945. While the heavy lifting for the G-7 summit will be done by Japan and member countries, they are still seen as a small and “elitist” grouping, and India’s heft as a developing power combined with its G-20 presidency make it the significant “other” this year, that can leave its mark in making the process more inclusive.

#### PREDICTABLE COUNTER

There was little surprise about the manner in which the government reacted to the U.S. State Department’s report on India, and other countries, dealing with religious freedoms. The report, which was released by U.S. Secretary of State Antony Blinken, lists a number of incidents of “concern” over the “continued targeting of religious minorities”. It also documents hate speech by leaders across the country, which includes members of the ruling Bharatiya Janata Party (BJP). The report was followed by a briefing by a senior official who said that according to the U.S. Holocaust Museum, which tracks majoritarian trends, India is ranked eighth among 162 countries on the risk of “mass killing”, a serious allegation. A Ministry of External Affairs (MEA) spokesperson said the report was based on “misinformation and flawed understanding”, and that the official’s commentary was “motivated and biased”. The rejection of the report is in line with India’s past reaction, as both the U.S. Commission on International Religious Freedom (USCIRF), as well as the U.S. State Department Report that bases itself on USCIRF recommendations, have been increasingly critical of India. They have noted that senior U.S. officials have repeatedly “encouraged” New Delhi to condemn religious violence and hate speech, indicating that they have not been successful. To this, the MEA has said that it “values” its U.S. partnership and have “frank exchanges”.

While the government’s reaction is stern, it is by no means as harsh as its response to a similar report last June, where the MEA had accused the U.S. government of catering to “vote bank politics”. For one, the report has come out just ahead of Prime Minister Narendra Modi’s meeting with U.S. President Joe Biden on the sidelines of the G-7 summit in Japan, as well as Mr. Modi’s state visit to the U.S., in June; it is likely that the government does not wish to queer the pitch publicly. The government may also recognise that while the State Department has been searing in its criticism, it has not placed India in the list of “Countries of Particular Concern” so far, as the USCIRF has often recommended. Given the consistent reportage on religious persecution in India





by the U.S. government, however, New Delhi may wish to engage with the allegations made, and come out with its own report on the state of religious freedom in the country to counter it. As Mr. Modi wrote in a letter to a resident of Jammu and Kashmir, the world is drawn to India because of the “natural and instinctive love” Indians have for diversity. The government must find more comprehensive ways to repudiate any unfounded and incorrect challenges to India’s reputation, and remediate in the areas it is found wanting.

#### SC BACK TO ITS FULL STRENGTH OF 34 AS CJI ADMINISTERS OATH TO TWO NEW JUDGES

Chief Justice of India D.Y. Chandrachud on Friday administered the oath of office to Justices Prashant Kumar Mishra and K.V. Viswanathan, bringing back the court to its full sanctioned strength of 34 judges.

Justices Mishra and Viswanathan would replace Justices Dinesh Maheshwari and M.R. Shah, both of whom had retired earlier in May.

May 19 also saw the court bid farewell to Justices K.M. Joseph, Ajay Rastogi and V. Ramasubramanian, who are all retiring in June during the summer vacation. Friday was the last working day of the Supreme Court before it goes into recess until reopening on July 2.

Justices Mishra and Viswanathan were sworn in as judges in the presence of the full court in an auditorium filled with members of the Bar. The government had cleared their appointments in record speed. The Collegium had recommended them for appointment to the Supreme Court on May 16. The government’s notifications were published on May 18 and coincided with the first day in office of the new Law Minister, Arjun Ram Meghwal.

Justice Viswanathan would be in line to be the 58th Chief Justice of India in August 2030, succeeding Justice J.B. Pardiwala as top judge. He is also only the ninth lawyer to be elevated directly to the Supreme Court Bench. Justice Mishra, who hails from Chhattisgarh, was the Chief Justice of Andhra Pradesh High Court before his appointment to the Supreme Court.

#### SC DEFERS SCIENTIFIC SURVEY ON ‘SHIVLING’ AT GYANVAPI MOSQUE

The Supreme Court on Friday deferred the implementation of a direction given by the Allahabad High Court on May 12 to conduct carbon dating and scientific survey of the ‘Shivling’ allegedly found on the Gyanvapi mosque premises in Varanasi.

A three-judge Bench headed by Chief Justice of India D.Y. Chandrachud said the “implications of the May 12 order would require closer scrutiny”. The carbon dating and scientific survey of the disputed structure was supposed to be held on May 22. The apex court ordered the exercise to be put on hold till the next date of hearing before it.

The Bench passed the order on a petition filed by the Anjuman Intazamia Masjid Varanasi, the mosque’s caretakers, represented by senior advocate Huzefa Ahmadi, against the High Court order.

#### **Court’s suggestion**

“Solicitor-General, would you like to take instructions on this... let us examine it a little carefully,” Chief Justice Chandrachud addressed Mr. Tushar Mehta, who was appearing for both the Centre and the State of Uttar Pradesh. The law officer agreed with the court’s suggestion, highlighting the



implications that may follow if the carbon dating and scientific survey happened to inadvertently “damage” the structure in question.

“My concern as an officer of the court is if by doing the exercise, there is some damage caused to the structure, which one side says is a ‘Shivling’ and the other side says is a fountain, whatever it may be... we will have to see how it can be done. Your Lordships, we will await your adjudication on this issue,” Mr. Mehta said.

Advocate Vishnu Shankar Jain, appearing for the Hindu women who were the plaintiffs in the suit claiming right to worship the ‘Shivling’, said the High Court’s order was based on a 52-page report filed by the Archaeological Survey of India (ASI). He said the report had categorically stated that no damage would be caused to the ‘Shivling’ during the scientific survey. “That the structure will not be damaged has already been taken into consideration,” he submitted.

However, the Chief Justice told Mr. Jain, “Let the government consider the situation. They will obviously consult the ASI. Let the government also consider other options and the issues involved... These are matters the government has to tread a little carefully about.”

#### CENTRE REVERSES SC ORDER, GIVES L-G FINAL SAY ON BUREAUCRATS

The Union government on Friday brought an ordinance designating the Lieutenant-Governor (L-G) as the administrator of Delhi, with the final say on the postings and transfer of all bureaucrats serving the Delhi government.

The ordinance, promulgated by President Droupadi Murmu, seeks to amend the Government of National Capital Territory of Delhi Act, 1991, and effectively negates the May 11 Supreme Court judgment that gave the Arvind Kejriwal-led Aam Aadmi Party (AAP) government the power to make laws and wield control over bureaucrats deputed to the Delhi government.

The ordinance seeks to establish for the first time the National Capital Civil Service Authority (NCCSA), which will be headed by the Chief Minister of Delhi, with the Chief Secretary and Principal Home Secretary of Delhi as its other two members.

“All matters required to be decided by the Authority shall be decided by majority of votes of the members present and voting,” read the ordinance, issued by the Union Law Ministry.

The authority will decide the transfer, posting and vigilance matters of all Group A officers and DANICS officers posted in Delhi through majority votes.

The ordinance stated that the L-G will pass orders to give effect to the recommendations passed by the NCCSA but can ask for the relevant material with regard to officers belonging to All India Services and DANICS serving the Delhi government. “...in case the Lieutenant Governor differs with the recommendation made, whether based upon the material so called for or otherwise, the Lieutenant Governor may, for reasons to be recorded in writing, return the recommendation to the Authority for reconsideration by the Authority,” said the ordinance.

However, the final decision will lie with the Lieutenant Governor of Delhi, the ordinance said. “Provided also that in case of difference of opinion, the decision of the Lieutenant Governor shall be final,” it read.



## L-G CAN DESTABILISE ELECTED MCD WITH POWER TO NOMINATE ALDERMEN, SAYS SC

THE SUPREME Court observed on Wednesday that giving the Lieutenant-Governor (L-G) the power to nominate aldermen to the Municipal Corporation of Delhi (MCD) will mean that he can “effectively destabilise the democratically elected” civic body.

The bench, led by Chief Justice of India D Y Chandrachud, was hearing a plea filed by the Delhi government, challenging the nomination of 10 aldermen by the L-G. The bench, also comprising Justices P S Narasimha and J B Pardiwala, reserved its order.

In its plea, the Delhi government sought quashing of the orders and notifications dated January 1, 2023 and January 4, 2023 issued by the L-G, naming 10 persons as nominated members of the MCD under the Delhi Municipal Corporation (DMC) Act, 1957. It also sought directions to the L-G to nominate members “in accordance with the aid and advice” of the council of ministers.

The AAP won the civic elections in December last year, ending the BJP’s 15-year run at the helm of the MCD.

## TIMELY CAUTION

The Supreme Court’s exhortation to the Enforcement Directorate (ED) not to create an atmosphere of fear indicates how much the agency needs to temper its zeal in investigating allegations against political opponents of the current regime. Responding to complaints that the ED is harassing employees of the Excise Department in Chhattisgarh in the name of investigating the money-laundering aspects of an alleged liquor scandal, a Bench has made the pertinent point that even a bona fide cause would seem suspect if a law enforcement agency conducted itself in a way that created fear. The observation is both a caution against transgressing the limits of a lawful investigation and a warning against letting a perception gain ground that the agency would go to any lengths to implicate someone. Given that several leaders and Ministers from States ruled by parties other than the BJP have been summoned by the ED, or arrested and imprisoned, not many will be surprised at the charges levelled on behalf of the Chhattisgarh government that the agency is running amok and that its officers were threatening State officers, in an alleged bid to implicate the State’s Chief Minister, Bhupesh Baghel. These charges may or may not be accurate, but the core problem is that the number of political adversaries under the agency’s adverse notice is unusually high.

A major complaint from the Opposition concerns the alleged politicisation of investigations and the personnel heading the agency. Some parties fear that the money-laundering law is being used for a political witch-hunt. The list of offences that may attract a money-laundering probe, over and above the police investigation into them, is quite long. Corruption allegations being quite common against politicians holding public office, each time a scam or a scandal is uncovered, the ED follows closely on the heels of the agency conducting the anti-corruption probe, to register a separate case under the Prevention of Money Laundering Act. While there is no problem with a stringent law on the subject, its executors have to be cautious about excessive zeal and expansive probes without identifying specific payoffs or following a money trail. The current Director of Enforcement was appointed for a two-year term in 2018, but continues to this day, thanks to extensions and a change in the law governing such extensions. The government has now assured the Supreme Court that he will not continue beyond November 23. The government often says the agency is only doing its duty and holding lawful investigations, but the perception of others is unlikely to be positive in the backdrop of the way it controls the agency’s leadership.

**3<sup>RD</sup> FLOOR AND 4<sup>TH</sup> FLOOR SHATABDI TOWER, SAKCHI, JAMSHEDPUR**



## FREEDOM OF SPEECH THE 'BULWARK' OF DEMOCRACY: WHY THE ANDHRA HC STRUCK DOWN ORDER SEEKING TO REGULATE PUBLIC ASSEMBLIES, PROCESSIONS

The Andhra Pradesh High Court has set aside a Government Order (GO) issued by the Andhra Pradesh government that sought to regulate public meetings, processions, and assemblies on roads, highways, and streets.

In doing so, a two-judge bench of Andhra Pradesh High Court Chief Justice Prashant Kumar Mishra and Justice D.V.S.S. Somayajulu said that “historically, culturally, and politically, the tradition of public meetings, processions, assemblies, etc., on streets, highways, etc., have been recognized in this country” and that it constitutes an important facet of our political life.

Additionally, the court said that the freedom struggle is replete with examples of processions, dharnas, and satyagrahas conducted on the roads that led to India’s “tryst with destiny” on August 15, 1947. Adding that even the political history of contemporary Andhra Pradesh has witnessed many “processions, padayatras, assemblies, etc.” conducted on its public roads and highways, the court struck down the GO dated January 2, regulating the same.

### **What is the government order and why was it issued?**

The basis of the challenge in the present case titled ‘Kaka Ramakrishna vs. The State of Andhra Pradesh’ was GO dated January 2, by which the Andhra Pradesh government sought to regulate public meetings or “assembly on roads, roadsides and margins”. The directions under this order were issued under relevant provisions of the Police Act, 1861.

The Andhra Pradesh government contended before the court that in light of certain fatal accidents that occurred in the recent past, involving loss of life, etc., in a stampede, it had decided to “regulate” the conduct of meetings without imposing a blanket ban on the same. It was also submitted that “roads are made for smooth movement of vehicular traffic and for transportation” and therefore if there is a hindrance to the same by holding meetings, the state can definitely impose reasonable restrictions.

The state government relied on Sections 30, 30A, and 31 of the Police Act, 1861, to issue directions under the GO. While Section 30 relates to the regulation of public assemblies and processions and licensing of the same, Section 30-A allows the magistrate, superintendent, or “any other officer” to stop the procession and order dispersal of the assembly if there is a violation of the licence conditions. Meanwhile, Section 31 relates to the police’s duty to keep order on “public roads, public streets, thoroughfares, ghats, and landing places”, and “other places of public resort”, along with the prevention of obstruction during assemblies and processions on such roads, streets, or near places of worship.

However, the court said that a “plain language interpretation” of Section 30 clarifies that the Police Act only gives authorities the power to “regulate” the conduct of assemblies, processions, etc., on public roads or thoroughfares.

Further, if the officer concerned thinks that the assembly may cause a breach of peace, he can ask the organisers to apply for a licence and prescribe the conditions under which the meeting or procession can be held, the court said. However, if the officer is of the opinion that there is no likelihood of a breach of peace, he cannot insist on a licence or permission being obtained. “The requirement of obtaining a license is to be preceded by the formation of an opinion of the officer that there may be a breach of peace, etc.,” the court said.





Adding that the power given to the police or magistrate is “only to regulate the conduct of assemblies, processions, etc., more so when they are likely to obstruct /block the roads”, the Court said that the right to assemble or protest peacefully in streets, public places, thoroughfares, etc. cannot be restricted totally by virtue of these sections of law.”

#### **What did the Andhra Pradesh HC hold?**

In its order dated May 12, the Court noted that the net effect of the contents of the January 12 GO was to impose a ban on all meetings on public highways, state highways, municipal and panchayat roads, etc. Striking down the GO, the court firmly opined that the “G.O. does not stand the test of law” and left it open to the state to frame proper guidelines in the future “keeping in view the law on the subject”.

In its ruling, the court reasoned that the fact that an accident or incident occurred at a particular place cannot be used as an “objective” or “cause” to curtail the right to assemble, to take out processions, etc., on all other roads. Instead, the cause of such incidents should be studied fully, and then safeguards or guidelines can be issued to prevent repetition, the court said. Stating that the “cure suggested in the G.O.” will impose a restriction on the individual and his constitutional freedom, the court said that such a restriction on the right of a citizen or a political party to assemble and hold meetings is unreasonable.

#### **What did the court say about the right to assembly?**

In its order striking down the GO, the court held that the “right to assemble, to protest peacefully, and to express one’s opinion freely” is too precious a freedom to be taken away by an “ipse dixit” (unproven assertion) given by the officer of the state. Stating that freedom of speech is the “bulwark” of democracy and is regarded as the first in the hierarchy of liberties, the court reiterated that it is too precious a freedom to be left to anyone’s unfettered discretion. Adding that the power conferred by the G.O. is “arbitrary, excessive, and also fails on the test of proportionality,” the court deemed the same to be an unreasonable restriction.

The Court also said that the objective of the state to prevent loss of life could have been a reasonable one but the directions given in the GO ultimately conferred “arbitrary power” on the officer in relation to a fundamental right under Part 3 of the Constitution. Thus, the court held that “Any G.O. or executive order which takes away the right of a political party, a citizen, or a group of people to assemble peacefully, to protest peacefully, etc., has to be viewed strictly. This is a right, which is conferred on the citizens by the Constitution.”

Building on this, the court said that such a right can only be subject to a ‘reasonable restriction’ while placing reliance on the top court’s 2018 decision in ‘Mazdoor Kisan Shakti Sangathan v Union of India and Another’, which laid down guidelines for peaceful assembly.

#### **What were the guidelines laid down in the 2018 SC ruling?**

In ‘Mazdoor Kisan Shakti Sangathan v Union of India,’ a PIL was filed before the Supreme Court challenging the repeated imposition of police orders under Section 144 CrPC, through which a ban was imposed in Delhi prohibiting assembly and dharnas without written permission in areas such as Parliament House, North and South Block, Central Vista Lawns, and its surrounding localities and areas.

The court laid down guidelines for regulating such protests and demonstrations while adding that the fundamental right to peaceful assembly under Article 19(1)(b) of the Constitution of India can

**3<sup>RD</sup> FLOOR AND 4<sup>TH</sup> FLOOR SHATABDI TOWER, SAKCHI, JAMSHEDPUR**





be reasonably restricted. The guidelines included regulating the intended number of participants in such demonstrations. It also prescribed the minimum distance from the Parliament House, North and South Blocks, SC, and the residences of dignitaries within which no demonstrations were allowed; imposed restrictions on certain routes where the PM, Central Ministers, and Judges pass through; and said that demonstrations would not be allowed when foreign dignitaries were visiting a place or route.

The court also disallowed demonstrators from carrying firearms, lathis, spears, swords, etc.

#### CHANGE FOR THE BETTER

It is difficult not to see the removal of Union Minister Kiren Rijiju from the Law and Justice Ministry as a move by Prime Minister Narendra Modi to avoid any escalation in his regime's confrontations with the judiciary in the one year left in his current tenure. Other considerations may have been at work in the shifting of Mr. Rijiju to the Ministry of Earth Sciences and the appointment of Arjun Ram Meghwal as Minister of State, with independent charge, in the Law Ministry, but the marked decline in Mr. Rijiju's frequent fulminations against the Supreme Court collegium do indicate a desire to tone down his penchant for confrontation. While there is inaction or delay on the part of the government on some recommendations, quite a few appointments, including in the Supreme Court, have been made since February, indicating a thaw in the frosty relations between the executive and the judiciary. Apart from his vocal criticism of the collegium system of appointments, which many others indeed see as flawed and in need of reform, Mr. Rijiju had tended to voice unusually trenchant opinions not befitting one holding a portfolio that involves dealing with members of the superior judiciary. He once accused a few retired judges of being "an anti-India gang" who were trying to make the judiciary play the role of an opposition party. On another instance, he voiced concern over the collegium making public some intelligence inputs on the basis of which candidates recommended for appointment were deemed unsuitable by the government.

In choosing Mr. Meghwal, who represents the reserved constituency of Bikaner in Rajasthan, Mr. Modi may have also been looking for a suitable opportunity to accommodate a Minister from Rajasthan in a portfolio with a higher profile. The Rajasthan Assembly elections are due around the end of the year. Mr. Meghwal has begun his stint with an observation that there is no confrontation with the judiciary and that his priority would be to ensure speedy justice for all. One issue that requires resolution is the finalisation of a fresh Memorandum of Procedure for judicial appointments. Mr. Rijiju had said earlier this year that the government had emphasised to the Supreme Court the need for finalising the procedure soon. He had also mooted the idea of a 'search-cum-evaluation committee', with a government representative on it, for the appointment of Supreme Court judges and Chief Justices. It is expected that the government will continue to accord great importance to these two issues. While pursuing such initiatives, the government should avoid giving the impression that it wants to gain absolute control over the appointment of judges.

#### EXPRESS VIEW ON KARNATAKA'S NEW GOVERNMENT: A JOB IN BENGALURU

The resolution of the impasse after the Karnataka victory is welcome. It is not surprising, perhaps, that it took the Congress high command days of apparently hardball negotiations with rival leaders and factions in the party to arrive at a formula acceptable to all — Siddaramaiah will be chief minister, DK Shivakumar remains within the tent as his "only deputy" as well as PCC



president. After all, the Congress's Karnataka victory was not the result of any single factor or leader or slogan. It was the culmination of a concerted statewide effort to which many contributed, and therefore several can now lay claim to it. The party must ensure that the compromise struck in Delhi does not come unstuck in Bengaluru — after all, it can ill afford for Karnataka to go the way of Rajasthan where its government is visibly unsettled by the prolonged Ashok Gehlot vs Sachin Pilot attrition. Going ahead, the challenge of balancing the ambitions and aspirations within, in a state where the Congress is still a lively political presence and robust organisationally, will call for wisdom and skill.

Bigger challenges await the new Siddaramaiah government. The veteran will need the formidable political capital he has already earned — as a pan-state leader and as an administrator who is also an ardent proponent of governance that is sensitive to minority concerns and the imperative of backward caste empowerment — to address them. The rout of the unremarkable Basavaraj Bommai government has not just handed the Congress a famous victory, it has also pointed to the uphill road ahead. The “40 per cent sarkar” label that contributed to bringing it down points not just to the BJP's dropping of the ball on corruption, but also to structural and systemic distortions, and a narrowing vision of the public good across governments and parties. The state which boasts of Bangalore as the hub of technological innovation and entrepreneurial energy needs a government that can take the next steps and set the bar higher both for the city and the state. Karnataka has waited much too long already for a “Karnataka model” of governance.

As the Siddaramaiah government gets down to its job, it will also need to ensure that while addressing special needs, it looks upon the state's distinct regions and castes equally, and expands spaces for the minority. Both the CM and his deputy belong to south Karnataka and neither is from the so-far politically dominant Lingayat caste — the onus of fairness and even-handedness is on the new government. It must also dispel the anxieties that have assailed sections of Muslims in the state, due to provocations on the Bommai government's watch, from the hijab ban to the rows over “halal” and “love jihad” and economic boycott calls against a community. The onus of applying the healing touch is also on Karnataka's new government. It must use its decisive mandate to give Karnataka the government it deserves — and the change it has voted with its feet for.

#### SUPREME COURT STAYS WEST BENGAL GOVT ORDER BANNING FILM ‘THE KERALA STORY’

THE SUPREME Court on Thursday stayed the West Bengal government's order banning the screening of the film, *The Kerala Story*, observing that fundamental right to free speech can't be made dependent on public display of emotions and Section 6(1) of the West Bengal Cinemas (Regulation) Act, 1954, under which it was banned, “cannot be utilised to put a premium on public intolerance”.

A three-judge bench presided by Chief Justice of India D Y Chandrachud also asked the Tamil Nadu government to provide adequate security to cinema halls which screen the film, and to those who want to watch it.

“Prima facie, we are of the view at this stage that the prohibition which has been imposed by the state of West Bengal suffers from overbreadth,” said the bench, which included Justices P S Narasimha and J B Pardiwala.

Saying that the “statutory requirements for the imposition of such a prohibition have not been fulfilled on the basis of the material which has been disclosed in the counter affidavit”, the bench



ordered: “Hence, the order of the Additional Secretary of the Government of West Bengal in the Department of Information and Cultural Affairs dated May 8, 2023 shall remain stayed.”

Recording the Tamil Nadu government’s counter-affidavit, stating that there is no direct or indirect ban on the film in the state, the court said: “We direct that adequate security shall be provided for every cinema hall and requisite arrangements shall be made to ensure the safety of moviegoers who wish to see the film in any theatre in the state”.

On the dispute over the film’s claim that 32,000 women had gone missing, the filmmakers agreed to include a disclaimer stating that “there is no authentic data to back up the suggestion that the figure of conversion is 32,000 or any other established figure” and that “the film represents a fictionalised account of the events which form the subject matter of the film”.

Appearing for the producer, Senior Advocate Harish Salve said the film already has a disclaimer which says it is a “fictionalised and dramatised” version of the events. He, however, agreed that the additional disclaimer “will be added... no later than by 5 pm on May 20”.

The court said it will also hear appeals against the Madras High Court order, which had dismissed the challenge to the film, and the Kerala High Court order, which refused to grant an interim stay on its release, in the second week of July, after it reopens.

The bench said it would watch the film. “We have given our mind prima facie. We have introduced the disclaimer. We are going to define the doctrine. We will also look at what should be permissible and what would not be permissible... certainly there are certain aspects of this case which require us to consider... we will look at the film,” the CJI said.

## ELECTIONS AND THE AIRWAVES

### **The story so far:**

In the recently-concluded Karnataka Assembly elections, political parties were provided free airtime on public broadcasters, All India Radio (Akashvani) and Doordarshan during elections. The allotment was available to six recognised national parties — the Bharatiya Janata Party (BJP), the Indian National Congress (INC), the Bahujan Samaj Party (BSP), the National People’s Party (NPP), the Aam Aadmi Party (AAP) and the Communist Party of India (Marxist) and one recognised State party, the Janata Dal (Secular). The parties were allocated a base time of 45 minutes and additional slots based on performance in previous polls. A total of 630 minutes of free airtime was issued under this allotment.

### **What is the rationale of the scheme?**

The facility to provide free airtime for political parties during elections was given statutory basis through the 2003 amendment to the Representation of People Act, 1951. The Supreme Court, in its famed judgment (*The Secretary, Ministry of Information and Broadcasting vs Cricket Association of Bengal and ANR, 1995*), held that airwaves are public property and its use should serve the greater public good. Elections being the lifeblood of a democracy, the misuse or abuse of airwaves to gain unfair electoral advantage is a key regulatory apprehension of governments around the world.

In the U.S., for example, the Federal Communications Commission, which regulates the electronic media in the country, devised the fairness doctrine to keep electioneering on the airwaves



equitable. The now defunct fairness doctrine placed a positive obligation on broadcasters who carry political content of one candidate on its programme to extend the same to another candidate in the electoral fray.

In the U.K. too, political parties are allocated designated slots by Parliament, called the party political broadcasts (PPBs) to convey important political information to the people. The British Communication watchdog, Ofcom, is responsible for ensuring that PPBs are included in every licensed public service television channel and commercial radio services. Similar requirements are adopted in Singapore, Brazil and Japan.

#### **What is the working of the scheme?**

In the Karnataka elections, the BJP received 167 minutes of broadcast time on both DD and Akashvani, while the Congress got 174 minutes and the JD(S) got 107 minutes. Time vouchers are distributed by a lottery system by the Election Commission in a transparent process to obviate any preferential treatment in getting primetime slots.

The transcripts of political parties are vetted to ensure that they adhere to relevant codes. These codes proscribe any content which are inter alia critical of other countries, attack religions or other communities or incites violence and personal attacks. In case of any disagreements over the content of the script as vetted by the public broadcaster, it is referred to an Apex Committee comprising members from Akashvani and DD whose decision is final.

In the Indian media landscape, due to the pattern of ownership of media houses, the public generally identify a broadcaster as being affiliated with one political party or the other. In this regard, State-sponsored airtime provides more diversity and colour to the electoral process.

For example, the NPP, which was a rank outsider in the Karnataka elections, was afforded the same base time of 45 minutes as the INC and the BJP. Since the content being aired has to adhere to specific codes, it upholds the principle of fair play.

The guidelines by the Election Commission of India (ECI) also require that a maximum of two panel discussions are also aired by Akashvani and DD. These discussions provide an excellent platform for parties, both big and small, to debate and criticise each other's policies and manifestos, and in general promote an informed citizenry.

#### **What are the operational challenges?**

The fact that the scheme is available to national and recognised State parties may attract arguments that it is not truly equitable. In light of the recent retraction of the national party status for the Nationalist People's Coalition (NPC) and the Trinamool Congress (TMC), this observation becomes important. However, the ECI is constrained by the considerations of practicality and the fact that airwaves are not an infinite resource.

The Apex Committee comprises officials from Akashvani and DD and are expected to sit in review of their own decision in case of conflict with the political party on the content of the transcript. This leaves scope for conflicts of interest and therefore, a more representative committee may be constituted.

There are also calls for extending the provision to cover private broadcasters akin to the fairness doctrine of the U.S. A designated slot may be mandated for private channels to air content





equitably and provide a platform for smaller parties and candidates. The political broadcast may be clearly differentiated from regular news broadcasts and programmes.

The 2024 General Elections will witness unprecedented levels of electioneering in the media. As spaces for sober, fair, considered and thoughtful debates shrink in a frenzy to grab attention, it is imperative that airwaves are used to nourish and enrich the Indian democracy and set standards for other electoral democracies.

## ANDHRA PRADESH BEGINS FREEING 2 LAKH ACRES OF 'DOTTED LANDS': WHAT ARE THESE DISPUTED LANDS, WHICH WILL NOW GO TO THEIR TILLERS?

The Andhra Pradesh government has started removing “dotted lands” in the state from the prohibited list, restoring full rights of selling or pledging these lands to the farmers who own them. Over 2 lakh acres of these British-era dotted lands have been identified for permanent denotification.

### What kind of lands are dotted lands?

Dotted lands are disputed lands for which there are no clear ownership documents. Typically, one or more individuals as well as the government’s Revenue Department lay claim over the land.

These lands came to be known as “dotted lands” because when, during the British era, land ownership surveys and resettlement of land records were taken up, local revenue officials who were tasked with identifying government-owned and privately-owned lands put dots in the ownership column if more than one person claimed ownership, or if ownership could not be clearly established.

These lands were also noted as disputed lands in the resettlement register or land records register. The dots on the land documents indicated their disputed status.

## ON SEXUAL HARASSMENT IN THE WORKPLACE

### The story so far:

Ten years after the Sexual Harassment of Women at Workplace (Prevention, Prohibition and Redressal) Act, 2013 (PoSH) came into force, the Supreme Court Bench of India has said there are “serious lapses” and “uncertainty” regarding its implementation.

### How was the PoSH Act formed?

In 1992, Bhanwari Devi, a social worker with the Women’s Development Project of the Rajasthan government was gang-raped by five men after she tried to prevent the marriage of a one-year-old girl. While hearing pleas filed by activist groups against the crime, the SC, noting the absence of any law “enacted to provide for effective enforcement of the basic human right of gender equality” guarantee against “sexual harassment at workplaces”, laid down a set of guidelines in 1997, christened the Vishakha Guidelines, to fill the statutory vacuum till a law could be enacted. These were to be “strictly observed in all workplaces” and were binding and enforceable in law.

After this, the Protection of Women against Sexual Harassment at Workplace Bill was introduced by then Women and Child Development Minister, Krishna Tirath, in 2007. It was later tabled in Parliament and went through amendments. The amended Bill came into force on December 9,





2013, as the Sexual Harassment of Women at Workplace (Prevention, Prohibition and Redressal) or PoSh Act.

#### **What is the PoSh Act?**

The PoSH Act defines sexual harassment to include unwelcome acts such as physical contact and sexual advances, a demand or request for sexual favours, making sexually coloured remarks, showing pornography, and any other unwelcome physical, verbal or non-verbal conduct of a sexual nature. Under the Act, an employee is defined not just in accordance with the company law. All women employees, whether employed regularly, temporarily, contractually, on an ad hoc or daily wage basis, as apprentices or interns or even employed without the knowledge of the principal employer, can seek redressal to sexual harassment in the workplace.

The law expands the definition of 'workplace' beyond traditional offices to include all kinds of organisations across sectors, even non-traditional workplaces. It applies to all public and private sector organisations throughout India.

#### **What are the requirements imposed on employers?**

The law requires any employer with more than 10 employees to form an Internal Complaints Committee (ICC) which can be approached by any woman employee to file a formal sexual harassment complaint. It has to be headed by a woman, have at least two women employees, another employee, and a third party such as an NGO worker with five years of experience, familiar with the challenges of sexual harassment. Besides, the Act mandates every district in the country to create a local committee to receive complaints from women working in firms with less than 10 employees and from the informal sector, including domestic workers, home-based workers, voluntary government social workers and so on. The employer has to file an annual audit report with the district officer about the number of sexual harassment complaints filed and actions taken at the end of the year.

#### **What are the hurdles to the Act's implementation?**

The Supreme Court in its recent judgment called out the lacunae in the constitution of ICCs, citing a newspaper report that 16 out of the 30 national sports federations in the country had not constituted an ICC to date. The judgment also flagged the improper constitution in cases where the ICCs were established — pointing out that they either had an inadequate number of members or lacked a mandatory external member. This, however, is not the only implementation-related concern when it comes to the PoSH Act. One of the concerns is that the Act does not satisfactorily address accountability, not specifying who is in charge of ensuring that workplaces comply with the Act, and who can be held responsible if its provisions are not followed. Stakeholders also point out how the law is largely inaccessible to women workers in the informal sector. Additionally, experts have noted that in workplaces sexual harassment cases are hugely underreported for a number of reasons. The framers of the law had recognised that complaints could be more effectively addressed within civil institutions (workplaces) so that women did not have to go through the daunting processes of the criminal justice system related to accessibility and timeliness. However, the inefficient functioning and the lack of clarity in the law about how to conduct such inquiries have ended up duplicating the access barriers associated with the justice system. Most importantly, the power dynamics of organisations and fear of professional repercussions also stand in the way of women for filing complaints.



### What are the SC's recent directions?

The court directed the Union, States and UTs to undertake a time-bound exercise to verify whether Ministries, Departments, government organisations, authorities, public sector undertakings, institutions, bodies, etc. had constituted Internal Complaints Committees (ICCs), Local Committees (LCs) and Internal Committees (ICs) under the Act. These bodies have been ordered to publish the details of their respective committees in their websites.

### KHASI COUNCIL ORDER ON FATHER'S SURNAME SETS OFF WAR OF WORDS IN MATRILINEAL MEGHALAYA

A tribal council's order not to issue a Scheduled Tribe (ST) certificate to any Khasi person who adopts the surname of her or his father has triggered a war of words in matrilineal Meghalaya.

The Khasis, numbering about 1.39 lakh, are one of the three indigenous matrilineal communities in the north-eastern State. The other two are Garos and Jaintias.

#### **KHADC criticised**

The Voice of the People Party (VPP), an 18-month-old political entity that won four Assembly seats in the February 27 election, has been critical of the order of the Khasi Hills Autonomous District Council (KHADC) order about a month ago. In that order, the KHADC directed the headmen of all villages and urban localities across the Khasi domain not to issue ST certificates to those who adopt their father's surname instead of sticking to tradition by taking their mother's clan name.

Men's rights activists among the Khasis have been fighting for switching over from the matrilineal to the patrilineal system since the 1960s.

### THE DEMAND FOR A KUKI HOMELAND, ITS HISTORY AND RATIONALE

The demand for a separate "Kukiland" dates back to the late 1980s, when the first and largest of the Kuki-Zomi insurgent groups, the Kuki National Organisation (KNO), came into being. The demand has surfaced periodically ever since.

In 2012, as it became increasingly clear that the demand for a separate Telangana state would be accepted, an organisation called the Kuki State Demand Committee (KSDC) announced a movement for Kukiland. KSDC had been calling occasional strikes and economic bandhs even earlier, blocking highways, and not letting goods enter Manipur.

The KSDC claimed 12,958 sq km, more than 60% of Manipur's 22,000 sq km area, for "Kukis and Kukiland". The territory of "Kukiland" included the Sadar Hills (which surround the Imphal valley on three sides), the Kuki-dominated Churachandpur district, Chandel, which has a mix of Kuki and Naga populations, and even parts of Naga-dominated Tamenglong and Ukhrul.

The KSDC and sections of the Kuki-Zomi community have maintained that the tribal areas "are yet to be a part of the Indian Union". They have contended that after the defeat of the king of Manipur in the 1891 Anglo-Manipur war, the kingdom became a British protectorate, but the lands of the Kuki-Zomi were not part of the agreement.

The KSDC also said that unlike the Naga demand for a separate country, it was only seeking a separate state within the Indian Union.



The agitation did have an impact — the Congress government of Chief Minister Okram Ibobi Singh declared, in the face of strong opposition from the United Naga Council, the Kuki-dominated Sadar Hills, part of the Naga-dominated Senapati district, as a separate district.

### **‘Land of freedom’**

The Kukiland demand is rooted in the idea of the Zale’n-gam, or ‘land of freedom’.

Some Kuki-Zomi people, especially the insurgent groups, contest the dominant narrative that their ancestors were brought from the Kuki-Chin hills of Burma by the British political agent and settled around the Imphal valley to protect the Manipur kingdom from the plundering Naga raiders of the north. They also contest the idea of the nomadic origins of the Kuki-Zomi.

In the opposing narrative, the Kuki Zale’n-gam sprawled across a large part of India’s Northeast and contiguous areas in present day Myanmar — and under the Treaty of 1834, the British handed over a significant chunk of this land to Burma to appease the Ava or Burmese king.

According to the KNO, the Zale’n-gam included the area up to the Chindwin river in Myanmar and covered the bordering regions of India, the areas around the Nantalit river in northern Myanmar, and stretched to the Chin state in the south. In India, the Kuki homeland included the hill districts of Manipur, including the Naga areas, Kanjang, Akhen, Phek, and parts of Dimapur in Nagaland, Karbi-Anglong, North Cachar Hills, and Halflong in Assam, and Tripura, as well as parts of the Chittagong Hill Tracts in Bangladesh.

Over the years though, this imagination of the homeland has shrunk to that of a state created out of the hill areas of Manipur, including those dominated by the Naga tribes.

## **SAFETY, IN LINE OF DUTY**

Medical science is so advanced today, it has extended longevity and enhanced quality of life in ways thought impossible in the past, and yet, life must end in death. For those who lose someone dear to them, there is anger, disbelief and lack of acceptance, and this is sometimes unleashed on the hospital, doctors and nurses. This is why Kerala’s move to amend the Kerala Healthcare Service Persons and Healthcare Service Institutions (Prevention of Violence and Damage to Property) Act, to fortify defences against attacks on health-care institutions and workers is not only welcome but is also essential intervention. The death of a young house surgeon, Vandana Das, at the hands of an ‘inebriated’ patient during a routine medical examination in Kerala has not only shocked the community but has also revived fear among health-care workers about their own safety. Doctors have organised protests across the country, condemning this attack and urging authorities to ensure protection. While this particular incident might have been an outlier in terms of how it occurred, recent history in the country is replete with instances of co-ordinated assaults on health-care workers by irate patients or their attendees disappointed with health outcomes. The warriors in the hospitals, unlike those battling on enemy lines, do not sign up for assault in the line of duty. It is the duty of the state and the community to protect them and ensure they are shielded from assault and abuse, verbal and physical. The Kerala amendment is progressive in that it proposes to bring verbal abuse and violent acts causing simple and grievous hurt under the purview of the Act. Enhanced jail term (up to three years) and a hefty fine (up to ₹50,000) for those found guilty are also being prescribed. The government has proposed time-bound speedy disposal of such cases besides designating one court in each district as a special court to deal with these cases.



Other States need to consider interventions on similar lines too. While the law itself needs to be potent, its implementation should also promote deterrence, driving home the government's commitment toward seriously handling assault on the health-care workforce. Since sagacity is unlikely to prevail in emergency and critical situations, it will be prudent to ensure that some measure of protection, security staff, for instance, is made available at private and public hospitals. It is unfortunate that a young doctor's life was snuffed out even as it had hardly begun, but it is very much in the hands of the States to ensure that no such sacrifices are demanded at the altar of patient care anymore.

## ASTR: HOW GOVT'S AI AND FACE RECOGNITION TOOL WILL DETECT PHONE FRAUDS

The Department of Telecommunications (DoT) has developed an artificial-intelligence-based facial recognition tool that it claims has the capability of running checks on subscriber databases of telecom operators to deduce whether it contains multiple connections associated with the same person.

The DoT claims the tool — called Artificial Intelligence and Facial Recognition powered Solution for Telecom SIM Subscriber Verification (ASTR) — can potentially bring down cyber frauds by detecting and blocking possible fraudulent mobile connections.

### The origins of ASTR

In 2012, DoT had issued an order to all telecom operators that they would have to share their subscriber database including users' pictures with the department. These images constitute the core database on which authorities are running their facial recognition algorithm using ASTR. The ASTR project was conceptualised and designed between April 2021 and July 2021 by the DoT's unit in Haryana.

A pilot project was launched in Haryana's Mewat region to test ASTR's feasibility. It is understood that before the ASTR pilot project, there were approximately 16.69 lakh SIMs in Mewat, of which close to 5 lakh SIMs across all telecom operators were detected to be fraudulent.

### How ASTR works

According to a case study paper authored by DoT's Naveen Jakhar, human faces in subscribers' images are encoded using convolutional neural network (CNN) models in order to account for the tilt and angle of the face, opaqueness and dark colour of the images.

After that, a face comparison is carried out for each face against all faces in the database, and similar faces are grouped under one directory. Two faces are concluded to be identical by ASTR if they match to the extent of at least 97.5 per cent. As per Jakhar's paper, ASTR is capable of detecting all SIMs against a suspected face in less than 10 seconds from a database of 1 crore images.

Once the faces are matched, ASTR's algorithm uses what it describes as "fuzzy logic" to find similarity or approximate matches for the subscriber names. To take a random example of a name, if one were to look up "Apple Inc.", the algorithm will produce related results including "Apple Incorporated", "Apple Park", "iPhone" etc. It also accounts for any typographical errors that might have occurred while the subscriber acquisition form was being filled.





The DoT allows an individual to take nine legitimate mobile phone connections using a single identity proof. In essence, what the ASTR does is – 1) it looks up if there are more than nine connections against a single individual’s photograph; 2) it runs a search through the database to see if the same person has taken SIMs under different names.

During a press briefing on Tuesday (May 16), Minister of Communications Ashwini Vaishnaw said that in one case, ASTR had detected as many as 6,800 connections against the same image of the subscriber — that is, the same face, but different names. In another case, 5,300 connections were found to have been taken against a single image.

#### **What happens next**

Once the DoT has determined that a set of numbers have been obtained by people through fraudulent means, it shares a list of those connections with telecom operators to block.

According to the Ministry of Communication, an analysis of more than 87 crore mobile connections was carried out using ASTR in the first phase, where more than 40 lakh cases of people using a single photograph to obtain mobile connections were detected. After “due verification”, more than 36 lakh connections were discontinued by telecom operators.

The same list is also shared with banks, payment wallets, and social media platforms for disengaging these numbers from their respective platforms.

Vaishnaw said that WhatsApp had “coordinated” with the Centre in disabling accounts created using such numbers. The government is working with other social media platforms as well, he added.

## THE NUTRITIONAL VALUE OF MILLETS

### **The story so far:**

The UN Food and Agriculture Organization (FAO) has declared 2023 to be the ‘International Year of Millets’, giving these crops a shot in the arm even as countries worldwide are looking to them for their ability to grow in environmental conditions that the climate crisis is rendering more common. Millets are becoming more popular in India as well because of their low input requirements and high nutritional density, both of which are valuable for a country whose food security is expected to face significant challenges in the coming decades. However, the consumption of millets face one threat that has already overtaken India’s major food crops — grain-processing.

### **What are millets?**

Millets are fundamentally grasses. They are cultivated worldwide, but especially in the tropical parts of Africa and Asia, as cereal crops. Some of the more common varieties include pearl millet (*Cenchrus americanus*), barnyard millet (*Echinochloa utilis*), finger millet (*Eleusine coracana*), and foxtail millet (*Setaria italica*).

There is both palaeontological and textual evidence to indicate that millets were being cultivated in the Indian subcontinent five millennia ago. According to the Agricultural and Processed Foods Development Authority, India is the world’s largest producer of millets. In 2021-2022, the country accounted for 40.51% of the world’s pearl millet production and 8.09% of sorghum. Within the country, pearl millet made up 60% of all the millet production, sorghum 27%, and ragi 11%.

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Sorghum (*Sorghum bicolor*), adlay millet (*Coix lacryma-jobi*), and teff (*Eragrostis tef*), among others, are grasses that differ in some respects from millets but are grouped together with them.

#### **Why are they sought after?**

Millets have two broad features that render them attractive — their nutritional value being comparable to that of major extant food crops (and better on some counts) and their ability to reliably withstand harsh, resource-poor conditions.

They are drought-tolerant, adapted to growing in warm weather, and require low moisture (axiomatically, they are particularly efficient consumers of water) and loamy soil. They don't grow well in water-logged or extremely dry soil which might occur after heavy rainfall or particularly bad droughts, respectively. Nonetheless, millets have the upper hand over crops like rice and maize with more drought-like conditions expected in many parts of the world, including the newly realised prospect of 'flash droughts'. That being said, millets don't abhor better growing conditions, and respond positively to higher moisture and nutrient content in the soil.

According to the M.S. Swaminathan Research Foundation, millets also “thrive on marginal land in upland and hilly regions”; marginal land is land whose rent is higher than the value of crops that can be cultivated there.

#### **Are millets nutritious?**

The nutritional content of millets include carbohydrates, proteins, fibre, amino acids, and various minerals. Different millet varieties have different nutrient profiles. For example, pearl millet — one of the oldest cultivated varieties — has been found to have higher protein content than rice, maize, and sorghum, while being comparable to that of barley. According to various studies, foxtail millet is rich in the amino acid lysine; finger millet has more crude fibre than wheat and rice; proso millet has a significant amount of the amino acids leucine, isoleucine, and methionine; and overall, millets have been found to be important sources of micronutrients and phytochemicals.

#### **Where are the nutrients stored?**

According to a paper published in 2021 in the journal *Agriculture & Food Security*, each millet kernel consists of three major parts, called pericarp, endosperm, and germ. The pericarp has an outer covering called the husk. The husk and the pericarp together protect the kernel from inhospitable conditions, disease, and physical damage.

The endosperm is the largest part of the kernel and its 'storage' centre. It has a protein covering called the aleurone. According to an FAO article about sorghum, the endosperm is “relatively poor in mineral matter, ash and oil content” but “a major contributor to the kernel's protein (80%), starch (94%) and B-complex vitamins (50-75%)”. Similarly, pearl millet has a relatively larger germ, which is “rich in oil (32%), protein (19%) and ash (10.4%),” plus “over 72% of the total mineral matter”.

This is why, according to various experts, millets deserve to be included in people's diets. But whether they're actually included depends on the availability of “delicious products to satisfy the taste, providing knowledge on nutritional and health facts on millets, and improving accessibility,” as per a 2021 study.



### **How does processing affect the nutrients?**

Processing and preparing millets for consumption can affect nutrients in three ways — enhance them, suppress/remove them, and ignore them. In this context, ‘whole grain’ refers to the endosperm, germ, and bran (pericarp + aleurone) whereas ‘refined grain’ refers only to the endosperm.

The husk is removed from the grains because it is composed of cellulosic matter that the human body cannot digest. But at least one study has found that when this is done to pearl millets, their phytic acid and polyphenol contents drop. (On the other hand, a paper published in 2021 found that millet husk could be briquetted and used as household fuel, and potentially alleviate energy poverty in north Nigeria.)

The second common step is to decorticate the grain, that is, remove any other outer covering and expose the seed. While studies have found that mechanical and hand-worked decortication did not have significant effects on the grain, they both removed crude and dietary fibre. But decortication also makes the grain more edible and visually attractive, which are favourable factors when marketing them to urban centres.

The typical next steps are milling, to grind the grains into flour, and sieving to remove large ‘impurities’, including bran. One 2012 study of finger millet found that whole-flour had a high content of “total polyphenols and flavonoids” while sieving made the flour more digestible and its nutrients more accessible to the body. However, it also reduced nutrient content due to the loss of bran.

On the other hand, according to the February 2022 study, germination and fermentation — in which the grains are soaked in water for an extended duration — “showed a positive improvement in the overall nutritional characteristics of millets”.

### **What is the effect of polishing?**

A frequent last step is polishing.

The longer the grains were milled, the more protein, fat, and fibre contents the process removed. A different 2012 study found that barnyard millet could be polished with a rice polisher for up to three minutes without significant nutrient loss. Polishing is the process whereby brown rice, for example, is changed to white rice by rubbing off the bran and the germ.

A 2012 study in the Journal of Cereal Science assessed the effects of polishing in the nutritive value of two major Asian rice varieties — indica and japonica. Using a combination of precision abrasive polishing, plasma mass spectrometry, and fluorescence microscopy, they found that polishing removed 8-10% of grain weight and also removed 60-80% of iron, magnesium, phosphorus, potassium, and manganese in both varieties. The loss of bran also compromised the grains’ fibre content. Yet rice polishing is considered desirable because, as per a 2009 study, most consumers favour the resulting taste and texture and prefer the shorter cooking time, and retailers want longer shelf-life, which can be achieved by removing the bran.



## WHY SPURIOUS LIQUOR KILLS

### The story so far:

As of 10 p.m. on May 16, as many as 22 people had died after consuming spurious liquor in the Chengalpattu and Villupuram districts of Tamil Nadu, while more than 30 others were still being treated in hospitals. The incidents occurred barely a month after the State government said that it had brought such deaths under control. They are also tinged with an element of surprise because liquor sales in Tamil Nadu are wholly controlled by the State, via more than 5,300 outlets. The State government is currently in the process of closing 500 outlets.

### What is the alcohol in liquor?

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

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

Ethanol (C<sub>2</sub>H<sub>5</sub>OH) is one carbon atom bonded to three hydrogen atoms and one more carbon atom; the second carbon atom is also bonded to two hydrogen atoms and the hydroxyl group, also known as the ion OH<sup>-</sup>. Inside the body, it is metabolised in the liver and the stomach by alcohol dehydrogenase (ADH) enzymes to acetaldehyde. Then aldehyde dehydrogenase (ALDH) enzymes transform the acetaldehyde into acetate. The adverse effects of alcohol consumption, from the hangover to a cancer, are due to acetaldehyde.

### What is spurious liquor?

Spurious liquor is characterised by the liquid mixture containing methanol as well. The police have thus far determined that the spurious liquor in both the Chengalpattu and Villupuram incidents arose from the same source, and that arrack sellers had purchased industrial-grade methanol from factories and sold it to the victims. (Arrack is distilled from the fermented sap of the palm tree.) In many older cases, such liquor is typically a home-made liquor, such as arrack, to which methanol was added to strengthen the intoxicating effects (in colloquial parlance, its kick) and/or to increase its bulk volume.

The Food Safety and Standards (Alcoholic Beverages) Regulations 2018 stipulate the maximum permissible quantity of methanol in different liquors. These values span a wide range, including “absent” in coconut fenny, 50 grams per 100 litres in country liquor, and 300 grams per 100 litres in pot-distilled spirits.

### What is methanol?

The methanol molecule (CH<sub>3</sub>OH) consists of one carbon atom bonded with three hydrogen atoms and one hydroxyl group.

Schedule I of the Manufacture, Storage and Import of Hazardous Chemical Rules 1989 includes methanol. The Indian Standard IS 517 applies to how the quality of methanol is to be ascertained,

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and together with the Tamil Nadu Denatured Spirit, Methyl Alcohol, and Varnish (French Polish) Rules 1959, what signage, methanol packaging should carry. The most common way to produce methanol is to combine carbon monoxide and hydrogen in the presence of copper and zinc oxides as catalysts at 50-100 atm of pressure and 250°C. In the pre-industrial era, going back to ancient Egypt, people also made methanol (together with several other byproducts) by heating wood to a very high temperature.

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

### How does spurious liquor kill?

The deadliness of spurious liquor arises from methanol.

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

Once ingested, methanol is metabolised in the liver by ADH enzymes to form formaldehyde (H-CHO). Then ALDH enzymes convert formaldehyde to formic acid (HCOOH). The accumulation of formic acid over time leads to a baneful condition called metabolic acidosis. Acidosis can lead to acidemia, a condition wherein the blood's pH drops below its normal value of 7.35, becoming increasingly acidic. The blood's pH is normally maintained by a balance between an acid, like carbon dioxide, and a base, like the bicarbonate ion (HCO<sub>3</sub><sup>-</sup>). As methanol is metabolised, the concentration of the bicarbonate ion drops, leading to the acid gaining the upper hand. Formic acid also interferes with an enzyme called cytochrome oxidase, which in turn disrupts cells' ability to use oxygen and leads to the build-up of lactic acid, contributing to acidosis.

According to a paper published by Archives of Toxicology in January 2022, consuming methanol also leads to “methanol-induced optic neuropathy ..., a serious condition that may result in long-term or irreversible visual impairment or even blindness [due to] damage and loss of function of the optic nerve and retina”.

Methanol-poisoning can also cause cerebral edema, haemorrhage, and death.

### How can such poisoning be treated?

Once methanol is ingested, the body takes some time to completely eliminate it. One estimate suggests that as much as 33% is still left behind after 48 hours. It is completely absorbed via the gastrointestinal tract and the blood-methanol level can reach its maximum value within 90 minutes. There are two immediate ways to treat methanol poisoning. One is to administer ethanol (of a pharmaceutical grade, by healthcare workers). This may sound counter-intuitive but ethanol competes very well with methanol for the ADH enzymes. As a result, the methanol is kept from being metabolised to formaldehyde.

The other option is to administer an antidote called fomepizole, which has a similar mechanism — it slows the action of the ADH enzymes, causing the body to produce formaldehyde at a rate

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that the body can quickly excrete, preventing the deadlier effects from kicking in. Both courses of action are limited by the availability of their characteristic compounds. Fomepizole is expensive whereas pharmaceutical-grade ethanol needs to be administered under supervision.

Healthcare workers may also have the individual undertake a dialysis to remove methanol and formic acid salts from the blood, and mitigate damage to the kidneys and retina. They may also administer folinic acid, which encourages the formic acid to break up into carbon dioxide and water. Both fomepizole and folinic acid are in the WHO's list of essential medicines.

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

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

#### EXPRESS VIEW ON HARYANA'S NEW LIQUOR POLICY: DRINK TO THAT

The Haryana government has announced that, as part of its new liquor policy, certain offices (those with over 5,000 employees, office space of at least 1 lakh sq feet and a canteen over 2,000 sq feet) will be eligible to sell booze on the premises. The cynical explanation is that taxes from booze contribute a significant share to many states' (including Haryana's) own revenue and trying to make vends of corporate offices is just a way for the government to line its pockets. But the parched worker may well respond: So what?

The drinks are bought and paid for either way and by drinking at work, around bosses and colleagues, the worst-behaved drinkers will likely learn not to over-indulge or, at least, become less aggressive and abusive. In fact, the policy is likely to have the added bonus (apart from money to the exchequer) of teaching people how to drink responsibly.

Those who do not work in Haryana are jealous, and many who work in smaller companies may well be planning a switch. This envy, which will likely lead to attrition and a lack of employee satisfaction, must be taken up by HR departments across the country. Rather than subjecting adult employees to happy birthday emails and enforced team-building exercises, just buy them a drink.

#### WHY LATE ONSET OF MONSOON ISN'T THE WORRY

The arrival of monsoon over the Kerala coast will likely be delayed by a few days, the India Meteorological Department said on Tuesday. Instead of its normal date of June 1, the monsoon is expected to arrive by June 4. The IMD said its forecast had an error margin of four days, so a further delay was possible.

The IMD forecast is likely to fuel apprehensions of a bad monsoon, but the two events are not connected. The timing of the onset of monsoon over Kerala has no bearing on the quantity of rainfall during the season.

#### Onset

The onset of monsoon over the Kerala coast is just a marker of the official beginning of the four-month monsoon season that brings more than 75 per cent of India's annual rainfall. An early or





delayed onset over Kerala does not in any way dictate monsoon performance over the rest of the season.

In fact, the onset over the Kerala coast is not even the start of the monsoon rains over India. The Andaman and Nicobar Islands start getting the rains at least two weeks before Kerala does. Sometimes, even parts of Kerala get rains for a few days before the onset is officially announced.

The onset is just a declaration that a set of criteria defined by the IMD to identify the arrival of the monsoon over the Indian mainland has been met. For this purpose, the IMD tracks rains at 14 selected meteorological stations on the Kerala coast. If at least 60 per cent of these stations, that is at least nine of them, get at least 2.5 mm rainfall for two consecutive days anytime after May 10, the onset is said to have occurred. There are a few other accompanying criteria, relating to wind speed and pressure, which need to be satisfied.

The monsoon then moves northwards, the speed of its movement dictated by local atmospheric conditions and the development of low-pressure areas. The normal arrival dates at different locations in the country are known, but the progression of monsoon does not always follow these dates. Late arrival over Kerala sometimes delays the arrival at some other locations as well, but not always.

#### **Onset and rainfall quantity**

In the past five years, only once has the onset over Kerala happened on the normal date, in 2020. In the past 11 years, it has happened once more. On other occasions, the onset was either a few days earlier or later. But this has no correlation with the amount of rainfall during the monsoon season.

In 2016, for example, the onset happened on June 8, the most delayed in the past 12 years. The rainfall that year was normal, 97.5 per cent of the long period average (see table). In 2018, the monsoon arrived early, on May 29. Rainfall was deficient that year — only 90 per cent of the long period average.

#### **Prospects of El Nino for India in 2023**

While the four-day delay in the onset of the monsoon is not of concern, the real worry is the unfolding situation in the equatorial Pacific Ocean. Recent forecasts suggest that El Nino, the warming of the equatorial Pacific Ocean that impacts weather events worldwide, is likely to develop earlier than expected. El Nino has the effect of suppressing the Indian monsoon rainfall.

The IMD, in its first forecast for this year's monsoon last month, predicted normal rainfall for the season. But since then, the situation in the Pacific has changed considerably. Latest forecasts predict the development of El Nino in the May-July period itself. In an alert on May 11, the Climate Prediction Centre (CPC) of the National Weather Service in the United States said El Nino was expected to develop "in the next couple of months", and that there was "a greater than 90 per cent chance" that it would persist through the rest of the year.

The CPC analysis said there was a 10 per cent probability of this developing into a strong El Nino in the June to August period. This probability rises to about 50 per cent for the September to November period.

Some other scientists have been warning of the possibility of a very strong El Nino this year, which also means that global temperatures could be expected to rise.



The IMD is expected to update its forecast for the monsoon later this month, and that would include an assessment of the kind of impact the El Nino is likely to have on the season's rainfall.

#### **Increasing variability**

The performance of the monsoon is usually measured by one indicator — the amount of rainfall the country as a whole received in the entire season as a percentage of long period average (the average of 1961 to 2010). A deviation of 4 per cent, in either direction, is categorised as normal. That means that since 2009, there have been only three years when monsoon rainfall has been below normal — in 2014, 2015 and 2018. In the other 10, the rainfall has been normal or excess.

But that single indicator hides an increasing variability in rainfall over the country, both in spatial and temporal terms. Within the season, the number of rainy days is getting concentrated — fewer days accounting for a larger proportion of seasonal rainfall — while the dry spells have been increasing in length. Simultaneously, different regions have been receiving very different rainfall. So, while India as a whole had below normal rainfall on only three occasions since 2009, northeastern India had it on nine occasions while northwestern India had it five times.

Floods and droughts have been happening at the same time. Extreme rainfall events have been on an increase, and under the impact of climate change, such patterns are expected to get exacerbated. That is why it is largely immaterial whether the country as a whole receives normal rainfall or not. The regional variations in rainfall and extreme rainfall events are more effective indicators to gauge how normal the monsoon season is.

### **GROUNDWATER EXPLOITATION IS SILENTLY SINKING THE GROUND BENEATH INDIA'S FEET**

Cracks in buildings and 'sinking' land in Joshimath, a hill town in Uttarakhand, made national headlines earlier this year. A similar phenomenon has been playing out for years in the plains of Punjab, Haryana, Delhi and Faridabad. The unlikely culprit is excessive groundwater extraction.

Agricultural practices in north-west India are heavily dependent on groundwater withdrawal. With limited monsoon rain, the groundwater table is precariously low, show data gathered for years by the Central Ground Water Board (CGWB). In Punjab, for instance, 76% of the groundwater blocks are 'over exploited'. In Chandigarh, it is 64% and about 50% in Delhi. This means that more groundwater than can be recharged is extracted. "Over time, when the underlying aquifers (deep water channels that are stores of percolated water) aren't recharged, they run dry and the layers of soil and rock above them start to sink," Prof. Dheeraj Kumar Jain of the Indian Institute of Technology (Indian School of Mines), Dhanbad, said.

Mr. Jain, whose core research interests lie in mining and minerals, said digging operations that were carried out hundreds of metres below the ground for coal, oil and gas through the years had shown examples of 'soil settlement,' or the soil sinking in to fill voids created from mining. "From here we surmised that if oil and gas extraction cause subduction (sinking), then surely groundwater also ought to be playing some role. We found such instances in several parts of the world and that motivated some of my students to assess the situation in India, particularly the National Capital Territory."

The CGWB, a subsidiary body of the Jal Shakti Ministry, is tasked with assessing the state of India's groundwater resources. It has a system of groundwater observation-wells and monitors water levels four times a year. It, however, does not analyse the consequences of 'over exploitation.' "The



link between excessive groundwater extraction and land subsidence only started to become clear, thanks to data from the GRACE (Gravity Recovery and Climate Experiment) satellites,” V.K. Gahlaut, chief scientist, National Geophysical Research Institute (NGRI), Hyderabad, said.

Mr. Gahlaut earlier published a research paper linking groundwater extraction to subsidence in Gandhinagar, Gujarat, an evidence that the issue was not specific to north India alone.

A wealth of studies in recent years, all of them obtained from satellite-based analysis of ground movement, from institutions and researchers that specialise in satellite-data analysis have correlated building deformities with groundwater withdrawals.

Kapil Malik, a research scholar who worked with Mr. Jain and runs the Noida-based Radar System and Services, used data from the Sentinel-1 satellite (different from GRACE) to show that from 2011-2017, the National Capital Region sunk, on an average, 15 mm per year. Urbanisation and unplanned growth were major factors, said Mr. Malik and this exacerbated groundwater withdrawal.

Parts of Delhi-NCR that saw subsidence were far away from tectonic (earthquake-linked) fault lines.

#### STUDY ON BUTTERFLIES' MIGRATION OPENS DOOR FOR CONSERVATION

This spectacular ecological phenomenon had been recorded more than a century ago but received little research and conservation attention until recently. However, a recent study by a team of researchers has shed light on the migration patterns of milkweed butterflies in southern India, which has the potential to contribute to the conservation of these butterflies and their migration in the face of ongoing changes in land use, habitat degradation, and climate warming.

The study was published in the recent issue of the Journal of Insect Conservation. After southwest monsoon, milkweed butterflies migrate westward from the Eastern Ghats and plains to the Western Ghats, becoming active for more than two months upon their arrival.

Between October and April, most of the milkweed butterflies in the Western Ghats congregate in large numbers at specific sites during winter and dry seasons. When the summer rain cools southern India, the butterflies migrate eastwards into the Eastern Ghats and the plains.

#### Vital role

“The migration of milkweed butterflies also plays a vital ecological role during the migration. As pollinators, their movements can impact entire ecosystems. Their migration is threatened by habitat destruction and climate change. Studying their migration patterns and feeding habits can throw light on the interconnectedness of plant and animal life. By unravelling the mysteries of their migration, we can help protect these beautiful creatures and their ecosystems,” says Mr. Vinayan.

“The Ferns society has begun tagging these migrating butterflies. Our hope is that their long-term monitoring of these tagged individuals will reveal more about the darker aspects of their migration,” he says.



## A BREAK IN THE WESTERN GHATS

Often called as a significant discontinuity in the Western Ghats, the Palghat Gap is about 40 km wide, with the steep Nilgiris and Anamalai hills, both rising above 2,000 msl, on either side.

The Palghat Gap has historically been important as a significant gateway into the State of Kerala.

It is a corridor for both roads and railways that connects Coimbatore with Palakkad. The Bharathappuzha river flows through it.

In contrast to the tropical rainforests of the Western Ghats, the vegetation in the Palghat Gap is classified as dry evergreen forest.

It also marks a divide in the flora and fauna of the region. For example, several species of frogs are found only on one side of the Palghat Gap.

### Geological upheaval

The Gap is a geological shear zone that runs from east to west. Shear zones are weak regions in the earth's crust — this is the reason why tremors are sometimes felt in Coimbatore.

The origin of the Palghat Gap also stems from the drift of continental shelves after Australia and Africa broke off from the Gondwana landmass.

India and Madagascar remained as one landmass until large-scale volcanic activity split the two, the split occurring where the Palghat Gap is located — this is mirrored in the Ranotsara Gap on the eastern face of Madagascar. How long ago did the Gap originate? The landmass split about 100 million years ago, and the Gap had formed before this; although how long before is debated.

It has been speculated that one reason for the biogeographic distinctions in species in north and south of the Gap could be due to an ancient river or an incursion of the sea in the distant past. Elephant populations on the Nilgiris side differ in their mitochondrial DNA from elephants in the Anamalai and the Periyar sanctuaries.

One study from IISc Bangalore has analysed DNA sequence divergence data in populations of the White-bellied Shortwing, an endemic and threatened bird. Birds found around Ooty and Baba Budan are called the Nilgiri blue robin; the Anamalai group differs slightly in appearance, and is called the White-bellied blue robin.

### South of the Gap

The biodiversity of a region is expressed in two ways: species richness, which relates to how many species are found in an ecosystem, and phylogenetic diversity, where you add up the evolutionary age of all the species you find.

Both these traits are abundant in the Western Ghats south of the Palghat Gap, as reported in a recent study by groups from the CCMB at Hyderabad and other institutions (Proceedings of the Royal Society B, April 2023). There are over 450 species of trees here, including some such as Magnolia champaca (Champa; Tamil: Sambagan) that have been around for over 130 million years.

Warm weather due to proximity to the equator, and moist air brings plenty of rain to the southern Western Ghats. Therefore, this region has been an island refuge for all forms of life, even as cycles





of ice ages and droughts have reduced biodiversity in surrounding areas. The Western Ghats in north of the Palghat Gap receive more rain annually, but the south gets rain more evenly throughout the year.

### CHEETAHS ARE DIFFICULT BREEDERS, BUT KUNO DEATH WAS AVOIDABLE: HERE'S WHY

A South African female cheetah died of injuries apparently inflicted by two males looking to mate with her in Kuno, Madhya Pradesh, last week. It is common for male cheetahs to show violent behaviour towards females, and putting the sexes together in confinement — as is the practice in Kuno — is always risky.

While a Namibian female earlier mated successfully under similar conditions in Kuno, last week's tragedy was the third death in the world's first intercontinental translocation project that has seen 20 cheetahs flown in from Africa.

#### The cats that lived

A landmark paper published in Science in 1983 submitted that all cheetahs are virtually twins or clones with extremely low genetic variation, which makes their future uncertain. Four decades on, not only are cheetahs around, they have been tasked with repopulating a lost habitat.

The cheetah's longevity was probably never in doubt, given that the species has survived 12,000 years since the Late Pleistocene period when many large mammal species went extinct and the population of cheetahs fell drastically, leading to inbreeding and genetic inelasticity.

Today, habitat loss and conflict with livestock owners pose bigger threats to the cheetah's future. Yet, its unique genetic profile has made breeding a perpetual struggle for one of the planet's greatest survivors.

#### Mating in the wild

In the social structure of other cats such as tigers or leopards, a large male territory encompasses multiple female territories to ensure female fidelity. Among cheetahs, females roam multiple male territories, and fidelity is not demanded of either sex. In fact, polyandry — in which a female pairs with multiple males — guards against further genetic constriction of the species.

Adult female cheetahs are solitary but not territorial. They travel across large overlapping home ranges, ignoring one another. While roaming different male territories, a female mates with multiple males — preferably, unrelated males — within an oestrus cycle, leading to multiple paternities in the same litter. Since female ranges overlap, territorial males are also free to try their luck with different females as they pass by.

Generally, when a female cheetah goes into oestrus, she urinates at prominent spots to attract a mate. However, uninvited males will often confront a female to check if she is ready to mate — during such encounters, it is not uncommon for an aggressive male coalition to injure, sometimes mortally, a female that is not in heat.

Relatively few cheetah matings result in conception. Cheetah sperm has low density and very high (70%) deformity. Post-conception, disadvantageous gene variants can cause loss of foetuses. And only 5% of cheetah cubs survive to adulthood.

#### Behaviour in captivity





Things get worse when the species is confined.

Genetic variation her top priority, the female is turned off by loss of mating choice in captivity. Though held in royal menageries for centuries, there is no authenticated record of cheetahs breeding in captivity until 1956, when a cub was born in Philadelphia zoo. Even today, only one in five captive cheetahs, male or female, breed despite multiple interventions.

In 2018, researchers tested female interest in urine samples from male cheetahs of varying genetic relatedness. Offered scents from 17 males, 12 females showed more interest in the most distantly related males, irrespective of the testosterone concentration in male urine or age parity.

Female cheetahs come to oestrus throughout the year, but may not show signs that they are not looking to mate. On other occasions, they may not go into heat for several months. Also, females housed together tend to suppress ovulation until they get familiar.

Misreading oestrus is risky because giving a male cheetah access to a female not in heat can lead to serious injuries. The species anyway shows signs of stress in captivity.

What foxed the scientists for long is that the cats, in spite of the long odds, do breed regularly in the wild — until they realised that the solution lay in mimicking the species' unique spatial and social orders in captivity.

#### **Cheetah 'lover's lane'**

In the wild, adult female cheetahs are solitary except when rearing cubs. And males, barring a few, roam in coalitions of brothers, half-brothers and, occasionally, unrelated males. The sexes rarely meet when not mating.

When zoos started housing male cheetahs together, not only were unrelated males accepted by siblings in their coalitions, their sperm quality also improved. In 2011, a study in a zoo in the UK documented the grooming of an unrelated male by a coalition of brothers over time, potentially helping him to breed.

Females, on the other hand, responded positively when left on their own in solitary enclosures away from the smell and sight of males. In this model, evolved in South Africa and the United States, a long pathway — dubbed lover's lane — connects isolated male and female holding areas, and takes males to female enclosures when it is time to sniff and tell.

To find out if a female is indeed in heat, she is first shifted to an enclosure close to the males to induce oestrus. She is then taken away, and a male is allowed down lover's lane to sniff her now-empty yard. The male can tell from the smell if she is in heat. If he tries to attract her with a typical barking sound, she is released to join him. If he does not bark, he goes back down lover's lane.

#### **The lesson for Kuno**

The purpose of India's Cheetah Project is to establish the African imports in the wild. But it also attempted captive breeding by simply putting the sexes together in an enclosure and leaving the outcome to chance.

Wild animals are unpredictable and no amount of caution guarantees total safety. Yet, given the knowledge-based innovations that have cut the risks in captive cheetah breeding across the world,



there is little justification for bringing the animals together in confined conditions in the hope that they might mate.

#### PARTITION MUSEUM STIRS MEMORIES OF LOVE AND LOSS

The Partition Museum, in the Mughal-era Dara Shikoh Library building, brought back memories of violence and displacement for many present at the venue, including Education Minister Atishi, who inaugurated the museum on Thursday.

The museum also highlights the struggle of the Scheduled Castes through various installations, including an audiovisual recording of the writer Manoranjan Byapari and letters from B.R. Ambedkar to Jawaharlal Nehru on caste-based discrimination at refugee camps set up after the Partition.

#### GATEWAY TO THE PAST: KHOONI DARWAZA IS A KEY WITNESS TO THE REVOLT OF 1857

From witnessing the events of the 1857 Revolt, sharing a neighbourhood with the Maulana Azad Medical College to bearing the history of executions, the Khooni Darwaza is a key piece of the country's history.

Situated near the Delhi Gate, Khooni Darwaza is a gate built during the reign of Sher Shah Suri in the 16th century.

The gate gets its name from the killings that took place there during the Indian Rebellion of 1857.

The architecture of Khooni Darwaza is a blend of Mughal and Afghan styles. The gate is made of quartzite stone and is three-storeyed. It has three arched entrances, with the central one being the largest. The upper stories of the gate have balconies with jharokhas that provide a view of the surrounding area.

It is around 50 feet in height and has different levels, which can be accessed by three different staircases. The gate has a large courtyard in front, which historians believed was used as a public gathering space in the past. The courtyard is surrounded by a high wall, and there are several chambers and rooms inside the gate.

"Within the boundaries of the Old Fort, Sher Shah built the Quila Khuna Masjid, a gem of an example of Afghan architecture, which was repaired by Lord Curzon during his viceroyship. Sher Shah's architecture technique is said to have been followed by Akbar when he constructed several buildings of the same style in Agra" wrote Ronald Vivian Smith in his book Delhi: Unknown Tales of a City. Smith further wrote: "Lal Darwaza, damaged by rains, was one of the gates built by Sher Shah in his new city of Delhi, besides the Kabuli Darwaza, which probably got its name because of the caravans which would pass it on their way to Kabul."

The Lal Darwaza is now called Khooni Darwaza and is said to have got its name after Bahadur Shah Zafar's sons and grandson were shot dead there by Lt. Hodson in 1857 when British forces had recaptured Delhi and the Last Emperor had taken refuge in Humayun's Tomb. "Two sons of Bahadur Shah Zafar and a grandson were shot and killed by Lt Hodson. After 1857, when the rebellion was crushed, Bahadur Shah Zafar and his family had taken refuge in Humayun's Tomb, the plan was that when things cool down they will travel from there to Allahabad by boat and from there they will go to Nepal where all rebel leaders had to meet. The only people who reached there



were his cousin and his mother; all others were arrested on the way. Zafar and his family were betrayed and they were made to surrender,” said writer Sohail Hashmi.

“Bahadur Shah Zafar and his wife were taken away separately and his two sons and a grandson were dressed up as common peasants and were made to ride a bullock cart, As they were being taken to the old city of Shahjahanabad, a large number of people gathered,” he added.

There are other stories about Khooni Darwaza’s nomenclature. One of them is of criminals who would be hanged to death there and another is related to the capture and execution of Dara Shikoh by Aurangzeb, his younger brother.

During the Independence, the Khooni Darwaza saw a lot of bloodshed. It is here where thousands of refugees were mercilessly killed while they were on their way to safety in Purana Qila.

### RAILWAYS’ RENOVATION PLANS AT HISTORIC ODISHA STATION RAISE RED FLAGS: A BRIEF HISTORY OF THE PARALAKHEMUNDI LIGHT RAILWAY

The Indian Railways has taken up the renovation of the historic Paralakhemundi railway station, one of India’s oldest and the first in Odisha’s Gajapati district.

However, there are concerns that the 124-year-old station might be demolished to pave way for new structures. Experts have raised red flags and sought heritage status for the structure.

We tell the story of the railway station and the historic railway line that passed through it.

#### **Paralakhemundi Light Railway (PLR)**

Naupada (a small town, now in Andhra Pradesh) got rail lines in 1894, as part of construction of Cuttack-Khurda Road railway line extending up to Vijayawada.

The then Maharaja of Parlakimedi (now Paralakhemundi) Goura Chandra Gajapati Narayan Deo II conceived of an idea to connect his capital with this mainline in an effort to strengthen his communication network. After receiving nod of the British authorities in 1898, he built a 39-km rail line— PLR — by spending around Rs 7 lakh from the royal coffers.

The 2-ft and 6 inches narrow gauge line was completed in 1899 and opened for traffic in 1900.

According to Dilip Samantray’s Odisha: The Railway Story, most of the coaches and wagons for PLR trains were supplied by Arthur Koppel and Co. of Calcutta, who assembled them from the kits supplies by a Germany-based company. The locomotives were built by England-based Kerr, Stuart and Company.

A wooden-bodied carriage was also built in 1899, for the specific use of the royal family of Paralakhemundi.

In 2011, the Railway Ministry had sanctioned a plan to upgrade the 90 km Naupada-Gunupur via Paralakhemundi narrow gauge line to a broad gauge, which would allow for the operation of more trains on the route and facilitate hassle-free traffic.

It would also develop a new station building on a raised platform, for the benefit of the passengers and carried out safety-related modernisation works including building an electronic interlocking system at the station.



However, the Indian National Trust for Art and Cultural Heritage (INTACH), a non-profit working on heritage conservation and awareness, has argued for the old structure to be preserved. According to INTACH, the structure is in good shape and does not need any further work which would undermine its tremendous historical value.

Thus, it has demanded the railway station's preservation as a heritage building, along with the restoration of other ancillary buildings like the old station master's building which INTACH wants to convert into a museum.

INTACH has also strongly demanded to bring back all other artefacts relating to the PLR to Paralakhemundi, many of which — such as signalling equipment, electrical equipment, scales, uniforms, insignia, German silver cutlery and erstwhile royal embellishments — are currently kept in the Nagpur museum.



# DreamIAS



## BUSINESS & ECONOMICS

### WHY ARE FINANCIAL REGULATORS TRANSITIONING FROM LIBOR?

#### The story so far:

On May 12, the RBI stated that some banks and financial institutions were yet to facilitate an absolute transition away from the London Interbank Offered Rate (LIBOR) benchmark. They had not inserted fallback clauses into all their financial contracts that reference U.S.\$ LIBOR or the corresponding domestic Mumbai Interbank Forward Outright Rate (MIFOR). Both LIBOR and MIFOR would cease to be a representative benchmark from June 30 this year.

#### What is LIBOR?

LIBOR is a global benchmark interest rate that combines individual rates at which banks opine they may borrow from each other (for a particular period of time) at the London interbank market. It is used as a benchmark to settle trades in futures, options, swaps and other derivative financial instruments in over-the-counter markets (participants engaging directly without using an exchange) and on exchanges globally. Further, consumer lending products including mortgages, credit cards and student loans, among others, too use it as a benchmark rate.

Every business day before 11 a.m. (London time), banks on the LIBOR panel make their submissions to news and financial data company, Thomson Reuters. The panel consists of commercial bankers such as J.P. Morgan Chase (London branch), Lloyds Bank, Bank of America (London branch), Royal Bank of Canada and UBS AG, among others. Following the submission, the contributed rates are ranked. Extreme quartiles, on the top and bottom, are excluded and the middle quartiles are averaged to derive the LIBOR. The idea is to be as close to the median as possible.

#### What was the controversy around it?

The central flaw in the mechanism was that it relied heavily on banks to be honest with their reporting disregarding their commercial interests.

It must be noted that the rates were made public. Therefore, it would not be particularly useful to impress upon potential and current customers the various disadvantages in obtaining funds. The phenomenon was particularly on display during the 2008 financial crisis when submissions were artificially lowered (amid the crisis). In 2012, Barclays admitted to the misconduct and agreed to pay \$160 million in penalties to the U.S. Dept of Justice. The Wall Street Journal too had studied in May 2008 that several panelists were paying “significantly lower borrowing costs” than what other market measures were suggesting. Another observed phenomenon was the tendency to alter (higher or lower) the submission as per the entities’ trading units’ derivative positions to acquire more profits.

#### Do we have an alternative in place?

Yes, in 2017, the U.S. Federal Reserve announced the Secured Overnight Financing Rate (SOFR) as a preferred alternative. Accordingly, in India, new transactions were to be undertaken using the SOFR and the Modified Mumbai Interbank Forward Outright Rate (MMIFOR), replacing MIFOR.





As stated by the International Finance Corporation (IFC), it is based on observable repo rates, or the cost of borrowing cash overnight, which is collateralised by U.S. Treasury securities. Thus, making it a prevailing transaction-based rate and drifting away from the requirement of an expertise judgement as in LIBOR. This would make it potentially less prone to market manipulation.

#### **How are we responding to the regime change?**

The RBI had stated in its November 2020 bulletin that, in India, exposures to LIBOR are from loan contracts linked to it and Foreign Currency Non-Resident Accounts (FCNR-B) deposits with floating rates of interest and derivatives. In August the same year, the banking regulator had asked banks to assess their LIBOR exposures and prepare for the adoption of alternative references rates. Contracts entered after (or before, if possible) December 31, 2021, were not to use the LIBOR as reference rate. More importantly, contracts entered before the date were to have fallback clauses, that is, an agreement for revised considerations when the reference rate is no more published — important for transparency and consistency.

#### **EXPRESS VIEW: HIROSHIMA G7 SUMMIT PROVIDES AN OPPORTUNITY FOR INDIA TO SEIZE NEW ECONOMIC POSSIBILITIES**

As he joins the G7 leaders in Hiroshima this week, Prime Minister Narendra Modi must try and recalibrate India's great power relations, reposition the country to deal with the unfolding structural changes in the world economy, and reassess its priorities in the multilateral arena. The Hiroshima summit is about uniting the advanced nations to confront the challenges presented by Russia and China and widening the G7 coalition to include key non-Western nations. The G7 countries plan to intensify the sanctions regime against Russia, whose war against Ukraine continues. The US and Japan also want to bring the European partners fully on board in confronting the China challenge. While the Europeans see the dangers of Moscow's aggression against Ukraine, they are less vocal about the Chinese ambitions for Asian hegemony. India has the opposite problem: While coping with the multidimensional threat from China has become Modi's principal preoccupation, he has tended to mince words on the Russian war in Ukraine and its implications for global order, especially the sovereignty and territorial integrity of nations.

That the US needs India to balance China has given Delhi some room for manoeuvre on the Russian question. But that room will continue to shrink as Moscow's war against Ukraine enters the 16th month. Military dependence on Russia, which is locked in an unwinnable confrontation with the West and hopelessly tied to China, India's principal adversary, does not bode very well for Delhi. Navigating paths out of difficult corners must be a high priority for the PM in his engagement with the G7 leaders. At the same time, Delhi must seize the new possibilities to accelerate its economic growth in partnership with the G7 countries. The US-China confrontation is no longer a narrow geo-political one, but also geo-economic, and that promises an overhaul of the world economic system.

As a member of the Quad with the US, Japan, and Australia, Delhi is already engaged in discussions about regional and global economic restructuring through the diversification of supply chains and greater technological cooperation among trusted friends and partners. Advancing this agenda is critical for India's long-term economic prospects. Finally, Delhi should also be clear-eyed about the global multilateral architecture. India's current leadership of the G20 does give it an important role in bridging the divide between the West and the rest. Delhi, however, must temper its expectations about G20 which is riven by deep internal conflict and the amorphous Global South.



Back in the 1970s and 1980s, India was tempted by the soaring ambitions of leading the Third World which blinded Delhi to the expansive opportunities for commercial cooperation between the North and the South that some of its Asian neighbours gained from. If Delhi lets its rhetoric on the Global South get ahead of itself, India could once again miss a hinge moment in the global political economy.

#### EXPRESS VIEW: THE CAPEX CYCLE LOOKS POISED FOR AN UPTICK

Official data released on Monday showed that the wholesale price inflation rate in April went into negative territory; it fell by almost a percentage point over April 2022.

This is the lowest WPI inflation print in the past 34 months and comes close on the heels of retail inflation moderating sharply. Clearly, price pressures have started to ease in the economy.

This may not just boost consumption demand but also could be the last trigger needed for India to witness a broad-based recovery in capital expenditure, especially in the private sector. To be sure, over the past five years, the government's broader strategy has been to incentivise a recovery of private sector investment sentiment as the main channel for economic growth.

To this end, the government has provided a whole host of policy incentives such as a historic cut in corporate tax rate and production-linked incentives while continuing to ramp up its own capital expenditure to historic levels. However, the hope for a private sector capex recovery hit back-to-back rough patches. First, the Covid pandemic destroyed consumer demand and then the spiralling inflation (in the wake of the war in Ukraine) robbed consumers of purchasing power.

The end result was a dampening of animal spirits in the private sector. But with inflation moderating and the RBI already showing signs of an extended pause on monetary tightening, it can be said that the domestic economy looks primed for take off.

There are several reasons why this may happen. For one, Indian banks are considerably healthier; their capital adequacy ratio is close to an all-time high.

Banks are the financiers of India's growth story and their being laden with massive amounts of bad loans was one key reason for the slowdown in the three years before Covid. Further, the private sector itself has deleveraged substantially.

The debt-to-equity ratio for the corporate sector is at a 15-year low. Over-leveraged firms were the other big stumbling block holding back India's growth in the past decade.

Taken together, these two factors will boost the risk appetite for new investments. And there are initial signs that this is happening. Credit growth is close to pre-pandemic highs and new project announcements by the private sector by the end of March were 150 per cent above the pre-pandemic levels.

Similarly, as a report from Jefferies equity research points out, the flow orders to industry companies have also witnessed more than 15 per cent growth (year on year) from the pre-pandemic lows of 5 per cent. Another key metric that signals a turnaround in the private capex cycle is the capacity utilisation level — at 73 per cent it is above the historical average and suggests that India is on the brink of a new phase of the capex cycle.



## CENTRE MORE THAN DOUBLES OUTLAY ON PLI FOR IT HARDWARE TO ₹17,000 CRORE

The Union Cabinet on Wednesday approved an updated Production Linked Incentive (PLI) scheme for IT hardware manufacturing, with the total budgetary outlay more than doubled to ₹17,000 crore, Minister of Electronics and Information Technology Ashwini Vaishnaw announced.

“Electronics manufacturing in India has witnessed consistent growth with 17% CAGR in [the] last 8 years,” the government said in a statement. “This year it crossed a major benchmark in production – \$105 billion.” India crossed \$11 billion in mobile phone exports, and was now the second-largest mobile handset maker behind China, the government said.

The PLI scheme for IT hardware, first notified in March 2021, provides upwards of 4% in incentives for incremental investment in domestic manufacturing for eligible firms, which include companies like Dell and Flextronics.

“Based on industry feedback on improving... the scheme, the Cabinet has approved the changes,” Mr. Vaishnaw said. For instance, he said, the incentive had been increased to 5%. An “additional optional incentive” has also been introduced for using domestically produced components. While Mr. Vaishnaw did not specify the rates of these optional incentives, he said that if they were availed as “envisioned,” the total incentive would amount to 8–9%.

Telecom hardware manufacturing had exceeded the projected ₹900 crore and reached ₹1,600 crore. “Two of those companies have become very important exporters in the world for complex radio equipment,” the Minister added.

## TRIPPING TRADE

This financial year is off to a subdued start on the trade front. Goods exports slumped to \$34.6 billion in April, the lowest since last October — the worst month for outbound shipments in 2022-23. This was the third successive contraction in exports, and 12.7% below last April’s numbers. Imports shrank by a sharper 14% to trip to a 15-month low of under \$50 billion. A slowing global economy had been hurting exports through the second half of 2022-23, with declines in four of six months. But April’s initial estimates are troubling not just because they represent the steepest fall in recent months but also signal a sudden shift in sequential momentum akin to the use of emergency handbrakes. This March, despite lingering global demand weakness, exports had hit a nine-month high of nearly \$42 billion while imports were \$60 billion. The new Foreign Trade Policy enunciated a two trillion-dollar export goal to be achieved in seven years. Its first month of implementation could not have been off to a shakier start. The prospects of last year’s healthy 14.7% growth that lifted total exports to about \$776 billion being replicated in 2023-24 look bleak already.

One may draw some succour from the trade deficit easing to a 20-month low. But managing the trade deficit cannot be the goal for policymakers. Falling imports also indicate that domestic demand, India’s proclaimed insulation against global headwinds, is ebbing. Moreover, when imports of petroleum (down 14%), and gems and jewellery plummet, they also affect exports of value-added end products. Petroleum exports shrank 17.5% in April, while jewellery shipments slipped at 30%, marking the seventh contraction in 10 months even as other job creators such as textiles have been hit hard. That commodity prices have cooled from last year is only one reason for the shrinking trade basket. Officials concede there does not seem to be any immediate respite likely from faltering global demand. China’s opening up of the economy may have prompted a



global trade growth forecast hike (from 1% to 1.7%) for 2023 from the WTO, but recent Chinese data have been underwhelming about the recovery momentum. Reluctant European and North American markets are only expected to speed up goods orders by September for the festive season, while services exports that have held up through the recent trade turmoil, may slow too. India must use this slack period to review its overall trade stance, the reliance on a few large markets, and pursue greater integration with global value chains and multilateral trading arrangements. These would yield better outcomes than fresh measures to hold down the import bill.

## STATISTICAL SUCCOUR

The reading for retail inflation braked sharply last month to an 18-month low of 4.7%, aided in no small measure by the fact that price gains had hit an eight-year high of 7.8% in April 2022. While at the headline level inflation cooled by 96 basis points from March's 5.66%, the month-on-month price gains based on the provisional Consumer Price Index (CPI) in April showed a quickening to 0.51%, from the 0.23% pace in March. Inflation also slowed in April on the back of a year-on-year softening in food price gains with the Consumer Food Price Index easing almost lockstep with the broader index — the reading slid 95 basis points from the previous month's 4.79%, to 3.84%. Oils and fats were a vital contributor, with a deflation in prices widening to 12.3% last month, from 7.86% in March. Also, inflation in cereals, which has the highest weight of almost 10% in the CPI, slowed by 160 basis points to 13.7%, from 15.3% in the preceding month.

However, a closer look shows price gains accelerated sequentially in nine of the 12 subgroups of the food and beverages category that contributes almost 46% weight in the CPI basket. While vegetable prices remained in deflationary territory when compared with a year earlier, they registered 1.7% month-on-month inflation. And prices of fruits surged almost 4% from March's levels, even as year-on-year the price gains were half that pace at 2.1%. Of concern is that prices of pulses and products as well as sugar and confectionery showed accelerations in both year-on-year and month-on-month inflation rates. With the domestic output of pulses weaker in the current crop year, the Centre has already moved to tighten its monitoring of tur and urad dal stocks held by traders, so as to head off any attempts to hoard and push up prices. It is also reportedly mulling more export curbs on sugar amid a production shortfall. To be sure, besides the Centre's supply side measures, last year's base effect is bound to ensure that headline retail inflation is unlikely to go back above the Reserve Bank of India's upper tolerance threshold of 6%, at least during the current quarter. Still, there is no room for complacency. As Jayanth Varma, a member on the RBI's Monetary Policy Committee, flagged last month, there still loom two major risks to the inflation outlook — oil prices and uncertainty on the monsoon. The heightening prospect of an El Niño forebodes the possibility of erratic or even significantly deficient rainfall impacting foodgrains production, and policymakers can ill afford to drop their guard on inflation.

## WHAT ARE RBI REGULATIONS ON GREEN DEPOSITS?

### The story so far:

Last month, the Reserve Bank of India (RBI) came up with a regulatory framework for banks to accept green deposits from customers. Under the new framework, banks that accept green deposits will have to disclose more information on how they invest these deposits.





### **What are green deposits?**

Green deposits are not very different from the regular deposits that banks accept from their customers. The only major difference is that banks promise to earmark the money that they receive as green deposits towards environment-friendly projects. For example, a bank may promise that green deposits will be used towards financing renewable energy projects that fight climate change. A bank may also avoid using green deposits to invest in fossil fuel projects that are considered harmful to the climate. A green deposit is just one product in a wide array of other financial products such as green bonds, green shares, etc., that help investors put money into environmentally sustainable projects.

### **What does the RBI's regulatory framework say?**

The RBI's framework for the acceptance of green deposits lays down certain conditions that banks must fulfill to accept green deposits from customers. Firstly, banks will have to come up with a set of rules or policies approved by their respective Boards that need to be followed while investing green deposits from customers.

These rules need to be made public on the banks' websites and banks will also have to disclose regular information about the amount of green deposits received, how these deposits were allocated towards various green projects, and the impact of such investments on the environment. A third-party will have to verify the claims made by banks regarding the projects in which the banks invest their green deposits as well as the sustainability credentials of these business projects.

The RBI has come up with a list of sectors that can be classified as sustainable and thus eligible to receive green deposits. These include renewable energy, waste management, clean transportation, energy efficiency, and afforestation.

Banks will be barred from investing green deposits in business projects involving fossil fuels, nuclear power, tobacco, gambling, palm oil, and hydropower generation.

The new rules are aimed at preventing greenwashing, which refers to making misleading claims about the positive environmental impact of an activity. For example, a bank may advertise that their green deposits will have a huge positive impact on the environment, while the actual impact may be minimal. A bank could also invest in projects that are not environment-friendly, perhaps because such projects offer higher returns, under the guise of green investing.

### **Will green deposits help depositors/investors and the environment?**

Depositors who care about the environment may get some satisfaction from investing their money in environmentally sustainable investment products. However, there are challenges, for the range of projects in which green funds can be invested by the bank is limited by design.

When it comes to protecting the environment, green investing enthusiasts believe that putting money into green projects may be one of the best ways to help the environment. Critics, however, argue that green investment products are often just a way to make investors feel good about themselves and that these investments don't really do much good to the environment.

Noted finance expert Aswath Damodaran, for instance, calls green investing "a feel-good scam" that enriches only consultants.





Second, in a complex world where any action involves second-order effects that are difficult to see, it can be extremely hard to know if a project is really environmentally sustainable.

## WHY HAS THE RBI WITHDRAWN RS 2,000 NOTES?

The Reserve Bank of India (RBI) has decided to withdraw the Rs 2000 denomination banknotes from circulation. But existing notes will continue to be legal tender, the RBI announced Friday.

The central bank has advised the public to deposit Rs 2000 banknotes, which were introduced after Rs 500 and Rs 1000 notes were withdrawn during the demonetisation exercise six years ago, into their bank accounts and /or exchange them into banknotes of other denominations at any bank branch.

### **Why has the RBI withdrawn Rs 2000 notes?**

The Rs 2000 note was introduced in November 2016 under Section 24(1) of The RBI Act, 1934, primarily with the objective of meeting the currency requirement of the economy expeditiously after the legal tender status of Rs 500 and Rs 1000 notes was withdrawn. With the fulfilment of that objective, and once notes of other denominations were available in adequate quantities, the printing of Rs 2000 notes was stopped in 2018-19.

The RBI issued the majority of the Rs 2000 denomination notes prior to March 2017; these notes are now at the end of their estimated lifespan of 4-5 years. This denomination is no longer commonly used for transactions; besides, there is adequate stock of banknotes in other denominations to meet currency requirements.

“In view of the above, and in pursuance of the ‘Clean Note Policy’ of the Reserve Bank of India, it has been decided to withdraw the Rs 2000 denomination banknotes from circulation,” the RBI said.

### **And what is the Clean Note Policy?**

The Clean Note Policy seeks to give the public good-quality currency notes and coins with better security features, while soiled notes are withdrawn out of circulation. The RBI had earlier decided to withdraw from circulation all banknotes issued prior to 2005 as they have fewer security features as compared to banknotes printed after 2005.

However, the notes issued before 2005 continue to be legal tender. They have only been withdrawn from circulation in conformity with the standard international practice of not having notes of multiple series in circulation at the same time.

### **So will the Rs 2000 banknotes continue to be legal tender?**

The Rs 2000 banknote will continue to maintain its legal tender status, the RBI has said. Members of the public can continue to use Rs 2000 banknotes for their transactions and also receive them in payment. “However, they are encouraged to deposit and/ or exchange these banknotes on or before September 30, 2023,” the RBI said.

### **What will happen after September 30?**

The RBI has not clarified the status of these notes after September 30. However, it has said that its instructions on the Rs 2000 notes will be effective until that date.



### **What should you do with the Rs 2000 notes you have?**

The RBI has advised people to “approach bank branches for deposit and/ or exchange” of these banknotes. “The facility for deposit into accounts and exchange for Rs 2000 banknotes will be available at all banks until September 30, 2023,” the RBI has said. The facility for exchange will also be available until September 30 at 19 RBI Regional Offices that have Issue Departments.

### **Is there a limit on how much money you can exchange or deposit?**

You can exchange Rs 2000 banknotes up to a limit of Rs 20,000 at a time. You don’t have to go your own bank — a non-account holder of bank also can exchange Rs 2000 banknotes up to a limit of Rs 20,000 at a time at any bank branch.

The exchange of Rs 2000 banknotes can also be made through business correspondents up to a limit of Rs 4000 per day for an account holder.

Deposits into bank accounts can be made without restrictions “subject to compliance with extant Know Your Customer (KYC) norms and other applicable statutory / regulatory requirements”, the RBI has said.

### **When can you start exchanging the Rs 2000 notes?**

To give time to banks to prepare, RBI has asked people to approach branches or ROs of RBI from May 23 to exchange their notes.

### **What happens if someone has a very large number of Rs 2000 notes?**

Technically, a person can seek multiple exchanges in packets of Rs 20,000 at a time. However, this is expected to attract the attention of enforcement agencies and the Income-tax Department. Those holding large sums of money in Rs 2000 notes are likely to find it difficult to exchange their money.

### **Could there be a repeat of the demonetisation chaos of 2016?**

It is unlikely that bank branches will witness chaos and long queues like in 2016 this time. The printing of Rs 2000 notes was stopped in 2018-19, and they are no longer commonly seen with the public — unlike the ubiquitous Rs 500 and Rs 1000 notes in 2016.

Also, the decision to withdraw Rs 500 and Rs 1000 notes was announced suddenly, taking the public by surprise. The exchange Rs 2000 notes will begin only on May 23, so banks and the public have sufficient time.

### **So what is the value of Rs 2000 notes in circulation currently?**

About 89% of the Rs 2000 denomination banknotes were issued prior to March 2017, and are at the end of their estimated 4-5-year lifespan. The total value of these banknotes in circulation has declined from Rs 6.73 lakh crore at its peak as on March 31, 2018 (37.3% of notes in circulation) to Rs 3.62 lakh crore, constituting only 10.8% of notes in circulation on March 31, 2023.

### **And what steps are banks supposed to take now?**

The RBI has asked all banks to discontinue issuing Rs 2000 denomination banknotes with immediate effect, and to reconfigure ATMs and cash recyclers accordingly.



Banks holding currency chests (CCs) should ensure that no withdrawal of Rs 2000 denomination is allowed from the CCs. All balances held in the CCs should be classified as unfit and kept ready for dispatch to the respective RBI offices.

## WHAT ARE THE GAPS IN THE AEPS TRANSACTION MODEL?

### The story so far:

Pushpendra Singh, a popular YouTuber, in a Twitter thread, shared how his mother's bank account was drained using an Aadhaar-linked fingerprint without needing a two-factor authentication. His mother was not informed of the transactions by her bank, via message or otherwise. A quick search on Google reveals that similar incidents have been reported in different parts of the country. Cybercriminals are now using silicone thumbs to operate biometric POS devices and biometric ATMs to drain users' bank accounts.

### What is AePS?

The Aadhaar-enabled Payment System (AePS) is a bank-led model which allows online financial transactions at Point-of-Sale (PoS) devices and micro ATMs of any bank using Aadhaar authentication. The model removes the need for OTPs, bank account and other financial details. It allows fund transfers using only the bank name, Aadhaar number, and fingerprint captured during Aadhaar enrolment, according to the National Payments Corporation of India (NPCI).

### Is AePs enabled by default?

Neither the Unique Identification Authority of India (UIDAI) nor NPCI mentions clearly whether AePS is enabled by default. Cashless India, a website managed and run by the MeitY, says the service does not require any activation, with the only requirement being that the user's bank account should be linked with their Aadhaar number. Users who wish to receive any benefit or subsidy under schemes notified under section 7 of the Aadhaar Act, have to mandatorily submit their Aadhaar number to the banking service provider, according to the UIDAI.

### How is biometric information leaked?

While Aadhaar data breaches have been reported in 2018, 2019, and 2022, the UIDAI has denied any breach of data. In response to media reports, the UIDAI said that the Aadhaar data, including biometric information, is fully safe and secure. However, UIDAI's database is not the only source from where data can be leaked. "Aadhaar numbers are readily available in the form of photocopies, and soft copies, and criminals are using Aadhaar-enabled payment systems to breach user information. Scammers have, in the past, made use of silicone to trick devices into initiating transactions," cybersecurity expert Rakshit Tandon, told The Hindu.

### How do you secure your Aadhaar biometric information?

The UIDAI is proposing an amendment to the Aadhaar (Sharing of Information) Regulations, 2016, which will require entities in possession of an Aadhaar number to not share details unless the Aadhaar numbers have been redacted or blacked out through appropriate means, both in print and electronic form. The UIDAI has also implemented a new two-factor authentication mechanism that uses a machine-learning-based security system, combining finger minutiae and finger image capture to check the 'liveness' of a fingerprint. Additionally, users are also advised to ensure that they lock their Aadhaar information by visiting the UIDAI website or using the mobile app. This



will ensure that their biometric information, even if compromised, cannot be used to initiate financial transactions. It can be unlocked when the need for biometric authentication arises, such as for property registration and passport renewals, after which it can again be locked.

#### **What can be done in case of a financial scam using Aadhaar?**

If users have not already locked their Aadhaar biometric information, they should do so immediately in case of any suspicious activity in their bank accounts. Users are also advised to inform their banks and the concerned authorities as soon as possible. Timely reporting can ensure that any money transferred using fraudulent means is returned to the victim. The RBI in a circular has stated that a customer's entitlement to zero liability arises where the unauthorised transaction occurs, and the customer notifies the bank within three working days of receiving a communication from the bank regarding such unauthorised transaction.

#### **RBI TRIPLES DIVIDEND, TO PAY ₹87,416 CR. AS SURPLUS TO GOVERNMENT**

The Central Board of Directors of the Reserve Bank of India (RBI) on Friday approved the transfer of ₹87,416 crore as surplus to the Union government for the accounting year 2022-23, or almost thrice the ₹30,307 crore transferred for the previous fiscal year.

The board also decided to raise the Contingency Risk Buffer to 6%, from 5.5% in the preceding year.

The RBI's board, which met in Mumbai under the Chairmanship of Governor Shaktikanta Das, approved the transfer after discussing the working of the central bank during the year April 2022 – March 2023.

#### **EXPRESS VIEW ON 20 PER CENT TAX ON CREDIT CARD SPENDING ABROAD: TURNING THE CLOCK BACK TO THE '70S**

During the high noon of Indian socialism, an era to which many bad economic ideas can be traced, such as the 97.75 per cent top marginal income tax slab, the Foreign Exchange Regulation Act imposed draconian constraints on financial transactions across borders. But, in the decades thereafter, especially post liberalisation, the policy establishment moved towards easing those restrictions. In 2004, the liberalised remittance scheme was introduced, providing Indians greater freedom and flexibility to remit funds abroad. Over the years, the LRS limit was increased from \$25,000 to \$2,50,000 per year, making it easier for individuals to transact abroad, and be part of the globalised economy. However, recent policy announcements suggest a determination to turn back the clock.

On Tuesday, the government amended the rules under the Foreign Exchange Management Act, bringing spending via credit cards under the ambit of the LRS. As a consequence, transactions done using credit cards outside India will attract a higher rate of TCS (tax collected at source) at 20 per cent from July 1. Several explanations have been put forth in defence of a bad move. Some have argued that not including credit cards was a loophole in the system that has now been plugged. But excluding spending through credit cards was a conscious policy choice under Rule 7 of the Foreign Exchange Management Rules. Concerns have also been voiced about the surge in overseas travel spending and the need to track transactions. But, surely an economy with strong fundamentals and a forex war chest should not be worried. And it must be asked: What sort of a





message is the government sending? Is it looking to clamp down even more as it worries about outward flows? Will this encourage creative ways to circumvent these regulations?

This is not a one-off, unfortunately. According to a circular issued by the RBI, investors who have remitted funds using the LRS route, and have either received or realised income, or have unspent or unused foreign exchange, will have to repatriate the funds within 180 days of the receipt/realisation, unless the funds are reinvested. As per experts, this change will only raise compliance and transaction costs. Indians, from all walks of lives, are now more connected with the outside world. The policy framework should make it easier for them to engage and transact in the global economy, not complicate or restrict the engagement. The government must immediately roll back this ill-conceived and ill-advised rule.

#### EXPRESS VIEW ON THE INSOLVENCY AND BANKRUPTCY CODE: CHANGES ARE NEEDED TO ENSURE ITS SMOOTH FUNCTIONING

The shift to the Insolvency and Bankruptcy Code in 2016 was a step towards reconfiguring the credit culture in the country, by providing for a time-bound resolution process that tried to move the balance of power in favour of creditors. However, the data that is frequently put out by the Insolvency and Bankruptcy Board of India suggests that the outcomes under this resolution framework have been less favourable than expected. For instance, the time taken for resolving cases generally tends to exceed the timelines originally envisaged and the realisations of creditors, both financial and operational, have been lower than expectations.

At the end of March, 6,571 cases had been so far admitted under this framework. Considering that around half of these proceedings were initiated by operational creditors, this does suggest that the Code has been able to serve as a powerful instrument for these firms, which are typically small and medium enterprises, to try to recover their dues from the larger companies. Of these admitted cases, 4,515 cases have been closed, while proceedings are ongoing in the remaining. And of the cases closed, a staggering 45 per cent have ended up in liquidation, while the rest have been either resolved, withdrawn or appealed. In the cases where the process has yielded resolution plans, realisations of creditors have been low. Of the total admitted claims of creditors estimated at Rs 8.98 lakh crore in these cases, the total realisable value was only Rs 2.86 lakh crore. This works out to only 31.8 per cent. Then there are the delays in the process to contend with. Of the cases that are currently going through resolution proceedings, almost two-thirds have crossed the 270-day deadline. And in the cases currently undergoing liquidation, 55 per cent have been going on for more than two years. Such delays, beyond the prescribed timelines, are unfortunate as they lead to further destruction in the value of assets.

Over the years, in attempts to improve the functioning and effectiveness of the resolution framework, various changes have been brought in the Code. In 2021, the government also brought in amendments to introduce a pre-packaged insolvency resolution process for MSMEs. This framework provides the space for a direct agreement between the firm's owners and its financial creditors, with the debtor remaining in control during the process. However, despite its appeal, this framework has not gained much traction. Various stakeholders do not seem to have considered this route an attractive proposition in the case of MSMEs — as per IBBI data, only four applications have been admitted under this framework as on March 2023, one of which has been withdrawn. As more changes to the IBC are in the offing — according to reports, the government is likely to introduce further amendments, perhaps in the monsoon session of Parliament — the



guiding principle should be to cut down the delays in the process, ensure smooth functioning, and increase the efficiency and effectiveness of the Code.

#### SEBI DENIES PROBING ADANI SINCE 2016; CONG. SAYS MINISTER MISLED LOK SABHA

The Securities and Exchange Board of India (SEBI), in the Supreme Court on Monday, denied as “factually baseless” the allegation that it had been investigating the Adani Group since 2016, triggering a war of words between the Congress and the Finance Ministry.

The SEBI’s affidavit, filed on Sunday, distanced the Adani Group from any “investigations” from 2016. The affidavit was in response to submissions made by advocate Prashant Bhushan before a three-judge Bench, led by Chief Justice D.Y. Chandrachud, in a hearing in the Hindenburg-Adani case on Friday.

However, Congress leader Jairam Ramesh took to Twitter to compare the market regulator’s claim in its affidavit that “the allegation that SEBI is investigating Adani since 2016 is factually baseless” with a statement made by Minister of State for Finance Pankaj Chaudhary in the Lok Sabha on July 19, 2021.

“The Minister of State for Finance, Pankaj Chaudhary, had told the Lok Sabha on July 19, 2021 that SEBI had been investigating the Adani Group. Now SEBI tells the Supreme Court that they have not been investigating any of the serious allegations against Adani! Which is worse — misleading Parliament, or being fast asleep as lakhs of investors are duped by alleged money-laundering and round-tripping using offshore shell companies. Or even worse, was there a restraining hand from above?” Mr. Ramesh tweeted.

The debate in court on Friday was initially centred on a request by SEBI for a six-month extension to complete its inquiry into Hindenburg Research’s report accusing the Adani Group of “brazen stock manipulation and accounting fraud schemes over the course of decades”.

The court had even urged the SEBI to show “some alacrity” in its investigation. The court has adjourned the Adani-Hindenburg case to July 10.

#### Unexpected turn

The May 12 hearing took an unexpected turn when Mr. Bhushan, for the petitioners, submitted orally that the SEBI had been investigating Adani since 2016. Solicitor-General Tushar Mehta vehemently denied Mr. Bhushan’s submission.

He said the latter was referring to a “completely unconnected” investigation. The SEBI’s affidavit took pains to explain that “the ‘investigation’ referred to by the petitioners pertained to the issuance of Global Depository Receipts by 51 Indian listed companies”. “No listed company of the Adani Group was part of the aforesaid 51 companies. Pursuant to the completion of investigation [into the 51 companies], appropriate enforcement actions were taken,” the SEBI maintained.

The relevant page of the Lok Sabha records posted by Mr. Ramesh on social media shows that one of the questions asked by Trinamool Congress MP Mahua Moitra was “whether the FPIs and/or Adani entities are under investigation by SEBI, IT, ED, DRI, MCA for suspicious transactions...” To this, the Minister had confirmed that “SEBI is investigating some Adani Group of companies with regard to compliance with SEBI regulations”. The Ministry responded to Mr. Ramesh’s tweet with a statement that “the government stands by its reply on July 19, 2021”. When asked about the



government's affirmation of its reply in Parliament about the SEBI's ongoing probe into the Adani Group, Mr. Ramesh told The Hindu that this was at odds with the regulator's stance.

#### HINDENBURG-ADANI CASE: EXPERT PANEL 'CLEARS' SEBI

A six-member expert committee — constituted by the Supreme Court in the Hindenburg-Adani allegations case and headed by former Supreme Court judge, Justice A.M. Sapre — said that the Securities and Exchange Board of India has “drawn a blank” and is in a “chicken-and-egg situation” in its investigation into the “ownership” of 13 overseas entities, including 12 Foreign Portfolio Investors (FPIs).

In its 178-page report, the panel said, “SEBI has found 42 contributories to the assets under management of the 13 overseas entities. Various avenues have been pursued — including ED, CBDT and various market regulators in the seven jurisdictions where the contributories are situated. SEBI has drawn a blank”. The market regular has asked the court for more time to complete its investigation.

The foundation of SEBI's suspicion that led to investigations into the overseas entities' ownership is that they have “opaque structures”, because the chain of ownership of the 13 entities was not clear.

The committee said that SEBI was investigating the ownership of the 13 entities since October 2020, with regard to allegations in the Hindenburg report about minimum public shareholding. “The key issue is whether as the law stands, one could draw a conclusion that the FPIs are fronts for the promoters of the Adani Group... If such an outcome in the investigation would come about, it would mean that the promoters would not be compliant with the minimum public shareholding requirement,” it noted.

While it emphasised the need for a “coherent enforcement policy”, the panel concluded it would not be possible to return a finding of “regulatory failure” in compliance with stipulations governing minimum public shareholding.

The Justice Sapre Committee said that the conundrum faced by the market regulator was due to a change in the legislative policy of SEBI under the FPI Regulations 2014 on the basis of a recommendation by a Working Group in 2018. As the law stands, FPIs need to only declare their “beneficial owner”, and not the “last natural person above every person owning economic interest in the FPI”, in conformation with the anti-money laundering law.

“In 2018, the very provision dealing with ‘opaque structure’ and requiring an FPI to be able to disclose every ultimate natural person at the end of the chain of every owner of economic interest in the FPI was done away with,” the report observed. It said that for the SEBI to put to rest its suspicions, its investigation would require information about the “ultimate economic ownership” — and not just the “beneficial owners” — of the 13 overseas entities under its lens.

#### **No abusive trading pattern**

On the issue of price manipulations, the report said that in the case of Adani stocks, 849 alerts were generated by the trading system. These alerts were considered by the stock exchanges in four reports to SEBI. Two of these reports were well before the Hindenburg report and two were after January 24, 2023. However, no pattern of “artificial trading or wash trades” were found..



The report agreed that there was “certainly high volatility in the Adani stocks after publication of the Hindenburg report”. “The market’s expectations from, and confidence in the Adani Group was shaken by the allegations in the Hindenburg report, which was inferential,” the report said.

#### EXPRESS VIEW ON GOVERNMENT’S OPEN NETWORK FOR DIGITAL COMMERCE: AN AUDACIOUS IDEA

E-commerce isn’t simply about placing orders for goods and services through digital platforms. Whatever is ordered online has to also be physically shipped and delivered in person to the buyer concerned. The success of Open Network for Digital Commerce (ONDC), the government-backed online marketplace, will ultimately depend on its ability to facilitate, if not offer, end-to-end solutions from logistics and warehousing to delivery and payments.

The likes of Amazon and Flipkart provide all these solutions, including through fulfillment centres receiving inbound products from vendors and ready for outbound dispatches whenever consumers order on their websites. That makes them, for all practical purposes, “operators” as opposed to mere online “platforms”. The platforms derive their power from not just connecting sellers and buyers, but also ensuring physical fulfillment of transactions or integrating online with offline.

The idea behind ONDC is quite audacious. It seeks to replace a “platform-centric” model that locks sellers into a specific application for enabling discovery by buyers with an “open network” based on non-proprietary protocols. In such a model, sellers and buyers can transact autonomously and switch between platforms that are interoperable. The objective is to onboard some 13 million mom-and-pop kirana stores and 42.5 million MSMEs that are now largely digitally-excluded. One cannot doubt the project’s intention or even potential, given the massive internet and smartphone penetration achieved during the last decade. No less is the success with regard to population-scale initiatives such as Aadhaar, the Unified Payment Interface (UPI), Goods and Services Tax Network, and CoWin vaccination applications.

But it raises the original question: While marketplaces are meant to connect sellers and buyers — and digital commerce can do that still better by expanding the universe of interactions — would it be enough? There has to be, at the end of the day, somebody to actually collect, transport and deliver the Madhubani painting or Kutch embroidery work to a buyer in Delhi. In UPI, the transactions are limited to transfer of funds between bank accounts that are linked to mobile phone numbers.

In ONDC, the loop would extend way beyond the online world. Amazon, Flipkart, BigBasket and Jiomart or, for that matter, Zomato, Swiggy and Urban Company may be proprietary platforms, but the fact is that they are today offering full-package solutions for fulfilling consumer orders. If ONDC is to “help our small retail survive the onslaught of large tech-based e-commerce companies” — to quote the Union Commerce and Industry Minister Piyush Goyal — it will have to do better than them or even what UPI did in payments. And it should definitely not burn the money of taxpayers or public financial institutions.

#### PREDATORY PRICING: TRAI TO LOOK INTO ALL TARIFF PLANS — PAST AND PRESENT

The Telecom Regulatory Authority of India has widened its probe in the matter of predatory pricing and unlimited offers, by including all the tariff plans — past as well as present — of all the





operators. This will include not only their 4G plans (and 5G in some cases) but even 2G and 3G plans.

Officials said that the idea is to find out whether all operators have violated the regulatory guidelines at some point of time by offering either 'unlimited' plans or indulged in any form of predatory pricing. "It needs to be found out when did it all start and who were the first ones to start," officials said. This will be the first time that the regulator has started such a comprehensive probe into all past tariff plans by the operators.

Though tariffs are under forbearance, Trai examines them generally a week after the new plans are filed with it. Officials conceded that Trai may have missed spotting any such violations, if it happened in the past.

The examination of the plans started with the 5G plans of Reliance Jio and Bharti Airtel upon a complaint by Vodafone Idea that the two were offering unlimited data plans as part of their services. Further, it alleged that 5G services were being offered at 4G rates, and this amounted to predatory pricing.

However, now even Vodafone is being probed whether it is offering unlimited data plans or did so in the past. Even state-owned BSNL's plans are being looked into, officials said.

The regulator had decided to direct Jio and Bharti to stop offering unlimited data in their 5G tariff plans, but the two informed it that even Vodafone Idea was guilty of the same in its 4G plans. The Trai has, however rejected Vodafone Idea's allegation that Jio and Bharti are indulging in predatory pricing by offering 5G at 4G rates, as their tariffs are not below cost.

"Vodafone Idea today does not have a significant market share of 30% in majority of the circles, but it had in the past. It is therefore necessary to find out whether it indulged in predatory pricing in the past," officials said. Any order on predatory pricing/unlimited offers need to be all comprehensive, hence the probe has been widened and will look into all the past offers also by the operators, officials added.

As part of the their tariff plans, operators put a cap on data usage by consumers. Upon launching their 5G services, Jio and Bharti did not put such a cap on data usage. Even if the caps are placed, it would not make sense since subscribers will not be able to consume their daily or monthly limits, the operators have said.

However, according to Trai, even then unlimited data is against regulatory guidelines and should be stopped.

#### BSNL STUMBLES AS JIO, AIRTEL EXPAND BROADBAND FOOTPRINT

State-owned Bharat Sanchar Nigam (BSNL) which was once the leader in the home broadband and wireline segments has now been struggling to retain its market share as both Jio and Airtel are aggressively expanding their footprints.

Apart from the competition from private players, the reason for fall in market share for BSNL in the fixed home broadband space is its weak investment and poor quality services, according to experts.



Expressing concern on the falling market share, BSNL CMD PK Purwar in a meeting with circle heads last month, asked them to find out the reasons behind growing number of disconnections in the fibre-to-the-home (FTTH) segment.

In the FTTH segment, the company currently has 3.54 million subscribers as of February end, compared to Jio and Airtel at 8.02 million and 5.98 million, respectively. BSNL lost its top position in the segment to Jio in November 2021, just within two years of commercial launch of JioFiber.

In December 2019, Jio had just 0.8 million wired broadband connections, whereas BSNL had 8.39 million subscribers and Airtel had 2.42 million subscribers. Back to February 2023, Jio is the market leader, Airtel is strongly expanding with its share with its last mile partner base, and BSNL is struggling to maintain its market share.

Similarly, in the wireline segment under which internet services are provided with a landline connection, BSNL's subscriber base was at 7.06 million as of February end. For Jio and Airtel, the wireline subscriber base was at 8.8 million and 7 million, respectively. Analysts believe that Airtel in a month or two, would surpass BSNL to become the second largest player in the wireline segment.

## ROBERT E LUCAS: THE ECONOMIST WHO ASSUMED OUR EXPECTATIONS WERE RATIONAL

Chicago University economist and Nobel laureate Robert E Lucas, 85, died on Monday. While awarding him the Nobel prize in economics in 1995, the Royal Swedish Academy of Sciences had stated: "Robert Lucas is the economist whose work has had the greatest impact on the development of macroeconomics and macroeconometrics since 1970."

His work challenged Keynesian orthodoxy and policy solutions (such as government providing tax cuts to boost economic activity and reduce unemployment), and led to the growth of what is called the new classical economics.

### Keynesian economics and Lucas

The 1970s turned out to be a crucial turning point for economics as a discipline. Since the Great Depression (1929-1939), Keynesian ideas had dominated policymaking and macroeconomics. Before Keynes, the classical view of economics saw little role for government intervention. However, the Great Depression changed all that.

Lucas's family was a good example. He was born in 1937 to parents of Republican leanings. But shortly after his birth, their family's restaurant business went bankrupt, thanks to the economic depression, and his parents became supporters of the New Deal (a policy approach that saw government as the prime mover). However, the stagflation — a curious combination of persistently high inflation and stagnant economic growth — of the 1970s was immune to Keynesian solutions. That is when Lucas's critique made a difference.

### What does rational expectations mean in economics?

Lucas will be remembered for developing the "rational expectations" approach to macroeconomics. Before the 1970s, there was little clarity on how expectations are formed. Mostly, it was thought that they were either fixed or backward-looking. For example, if inflation was 4% for the past two years, the belief was that people's expectation of future inflation would be either fixed at 4% or be based on past inflation. But Lucas argued that such a view would imply



irrational behaviour by humans at the macro level when at the micro level (read personal level), the discipline expected humans to behave rationally.

To act rationally means to act in one's own interest and by making use of the information available. Lucas argued that if people can see that other variables — such as money supply or employment — are trending in a particular direction, then their expectation of inflation would change. This would be the rational behaviour.

For instance, if the central bank is pumping lots of money into the economy this year, perhaps in a bid to boost economic activity, then Lucas' "rational expectation" model suggests that people will realise that inflation will go up. In other words, their expectations will change in a rational manner as the situation evolves.

#### **What is the real-world impact of this theory?**

This "assumption" of rational expectations has massive policy implications.

Here's an example: Imagine that the government decides to cut taxes in a bid to boost consumption. The idea is that lower taxes will leave more money in the hands of the people and this extra money will be spent buying new things, and, as a result, boost overall economic activity and reduce unemployment.

But, if one plugs in Lucas's assumption of rational expectations, the whole policy initiative can become ineffective. It can be argued that as soon as the government cuts taxes, people will realise that the government's budget will go into a deficit (that is, revenues will dip while expenditures stay the same).

Further, people will realise that to bridge this deficit, the government will eventually have to raise the taxes — say in a year or two. As a result, rational behaviour would suggest that people simply "save" the additional money coming to them from the latest tax cuts so that they can pay the higher taxes later. As people save (instead of spending), the government's original intention of boosting economic activity fails.

Lucas argued that standard macroeconomic policies cannot improve economic outcomes such as reducing unemployment. Lucas had started out as a student of history, but shifted to economics after realising that economic factors were often the key drivers of history.



## LIFE & SCIENCE

### SATURN'S RINGS ARE 4.4 BILLION YEARS OLD

Researchers using data from NASA's Cassini spacecraft have found that Saturn's rings formed around 4.4 billion years ago, shortly after the planet itself took shape.

The origin of Saturn's ring system remains hotly debated, with some researchers arguing that it's a relatively young structure and others holding that it coalesced long ago, at roughly the same time as the gas giant's many satellites.

The new study, using data gathered by NASA's Saturn-orbiting Cassini spacecraft, strongly supports the latter scenario, researchers said.

Cassini's measurements suggest that "the main rings would be [extremely old, rather than hundreds of millions of years old," said Sascha Kempf, of the University of Colorado in Boulder.

Saturn's main ring system is huge but razor-thin, measuring about 280,000 kilometres across but just 33 feet or so in the vertical direction.

The rings are composed primarily of water ice, but they contain small amounts of rocky material contributed by micrometeoroid bombardment,' LiveScience' reported.

Kempf and his colleagues used Cassini's Cosmic Dust Analyzer instrument to measure just how frequently such tiny particles cruise through the Saturn system.

They found that a surprisingly small amount of dusty material comes into contact with the rings.

After measuring the low rate of dust recruitment, the team calculated that the rings have likely existed for about 4.4 billion years.

"It would be consistent with an old ring system," Kempf said.

The study was presented at the annual meeting of the American Geophysical Union.

### WARMING WARNING

The World Meteorological Organization (WMO) has issued its annual update on its projections for temperature trends in the next decade. The prognosis, expectedly, is worrying. The annual mean global near-surface temperature for each year between 2023 and 2027 is likely to be 1.1°-1.8°C higher than the average from 1850-1900. There is a 66% chance that the global near-surface temperature will exceed 1.5°C above pre-industrial levels, in at least one year before 2027 though it is unlikely that the five-year mean will exceed this threshold. The 1.5°C threshold, the Intergovernmental Panel on Climate Change has repeatedly said, is one that is best left unbreached to avoid the disastrous consequences of global warming. While world leaders at climate summits are in agreement, few of their actions are consistent with keeping temperature-rise within this rubicon, with current climate policies poised to heat the globe beyond 2°C by the end of the century.

At least one of the years, the WMO adds, from 2023 to 2027 will be the hottest on record — exceeding the 14.84°C reported in 2016 (it was about 0.07°C warmer than the previous record set





in 2015). The five-year mean for 2023-2027 was very likely to be higher than that in the last five years (2018-2022). The oceans too are on fire. The El Niño-Southern Oscillation (ENSO) is likely to be positive in December to February 2023-24, meaning that the Central Equatorial Pacific Ocean is likely to be at least half a degree, more likely over a degree above what is normal. India is bracing for this El Niño during the monsoon, with the India Meteorological Department already indicating that monsoon rainfall will be on the lower side of 'normal'. The El Niño "will combine with human-induced climate change to push global temperatures into uncharted territory", WMO Secretary-General Petteri Taalas said in a press statement in the context of the update. Hotter oceans also mean stronger cyclones. Cyclone Mocha, which barreled through Myanmar this week and claimed at least 60 lives and wrought severe damage, ended up being stronger than what was initially estimated. The WMO update does not have specific inputs for India; however, the overall trend in indicators suggests that India, dependent as it is on rain-fed agriculture and with its long coastline, will be severely tested due to changes in the global climate. India's abilities at forecasting cyclones and weather anomalies have improved but developing resilience is far more challenging. Greater investments in bolstering disaster-related infrastructure are the need of the hour.

## SEA LEVEL RISE

Researchers have uncovered a previously unseen way in which ice and an ocean interacts.

According to glaciologists, this could mean that the climate community has been underestimating the magnitude of future sea level rise caused by polar ice deterioration.

Using satellite radar data from three European missions, the team learned that the Petermann Glacier's grounding line — where ice detaches from land bed and floats in the ocean — shifts during tidal cycles, allowing warm seawater to intrude and melt ice at an accelerated rate (Proceedings of the National Academy of Sciences).

The researchers found that as the Petermann Glacier's grounding line retreated nearly 4 km between 2016 and 2022, warm water carved a 670-foot-tall cavity in the underside of the glacier, and that abscess remained there for all of 2022.

The new study shows that warm ocean water intrudes beneath the ice through pre-existing subglacial channels, with the highest melt rates occurring at the grounding zone, says a release.

## THAWING PERMAFROST IN THE ARCTIC COULD UNLOCK TOXIC WASTE BURIED FOR DECADES: NEW STUDY HIGHLIGHTS RISKS

With rising global temperatures, thawing permafrost is likely to destabilise thousands of industrial sites and linked contaminated areas in the Arctic, which could result in the spread of toxic substances across the region, according to a new study. Nearly 2,100 industrial sites and between 5,600 and 10,000 contaminated sites are under threat of destabilisation by the end of this century.

The study, 'Thawing permafrost poses environmental threat to thousands of sites with legacy industrial contamination', was published in the journal Nature Communications earlier this year.

Contrary to common perception, the Arctic is far from an uninhabited and untouched region. It's dotted with countless industrial facilities such as oilfields and pipelines, mines and military bases.



All this infrastructure is built on permafrost, which was once believed to be perennially stable and reliable. The toxic waste from these industrial facilities has been buried in the permafrost, on the assumption that it would stay locked away permanently. But danger looms as the planet continues to heat up.

“A major problem is that for a long time (before and in the 1990s) the consequences of global warming and thawing permafrost were not taken into account and definitely underestimated. There are many engineering studies from that time that consider permafrost as a favourable condition for the disposal of industrial legacies and other wastes. Today, these former practices (some of which are still in use) are becoming an increasing problem as large parts of the Arctic are already affected by thawing permafrost,” Moritz Langer, one of the authors of the study, told The Indian Express.

#### **What is permafrost?**

Permafrost is essentially any ground that stays frozen — 0 degree Celsius or lower — for at least two years straight. These permanently frozen grounds are often found in Arctic regions such as Greenland, Alaska (the United States), Canada, Russia and Eastern Europe.

According to the National Aeronautics and Space Administration (NASA), permafrost is composed of “a combination of soil, rocks and sand that are held together by ice. The soil and ice in permafrost stay frozen all year long.” However, although the ground remains perennially frozen, permafrost regions aren’t always covered with snow.

#### **What are the findings of the study?**

It was because of these characteristics that countries and corporations began building infrastructure on the Arctic’s permafrost. The region witnessed a further expansion of industrial and economic development during the Cold War — it became a centre for resource extraction and military activities, as per Langer. This led to the accumulation of industrial and toxic waste on or in permafrost which was never removed.

“Known industrial waste types (in the region) include drilling and mining wastes, toxic substances like drilling muds and fluids, mine waste heaps, heavy metals, spilled fuels, and radioactive waste,” the study mentioned.

But as the Arctic is getting warmer nearly four times as fast as the rest of the planet due to climate change, permafrost is thawing rapidly, which could destabilise not only the industrial sites but also the contaminated areas. And once the destabilisation takes place, toxic substances would be unleashed across the region, threatening numerous species living there and the health of people who depend on them.

#### **What are the other consequences of thawing permafrost?**

According to experts, thawing permafrost can severely impact the planet. One of its most dangerous consequences is the release of greenhouse gases into the atmosphere. A 2022 report by NASA said, “Arctic permafrost alone holds an estimated 1,700 billion metric tons of carbon, including methane and carbon dioxide. That’s roughly 51 times the amount of carbon the world released as fossil fuel emissions in 2019.”



Moreover, “Plant matter frozen in permafrost doesn’t decay, but when permafrost thaws, microbes within the dead plant material start to break the matter down, releasing carbon into the atmosphere,” it added.

The report also said that current models estimate that there would be “a pulse of carbon released” from the permafrost to the atmosphere within the next hundred years, probably even sooner. It remains unclear how much of the carbon will be released from permafrost in the following years.

A 2022 study by Columbia University observed that thawing permafrost would unleash thousands of dormant viruses and bacteria. Some of these “could be new viruses or ancient ones for which humans lack immunity and cures, or diseases that society has eliminated, such as smallpox or Bubonic plague.”

### THREE KILLED, ROOFS TORN OFF AS CYCLONE MOCHA MAKES LANDFALL IN MYANMAR

The centre of Cyclone Mocha made landfall on Sunday afternoon in Myanmar’s Rakhine state near Sittwe township with wind speeds up to 209 kilometres per hour, Myanmar’s Meteorological Department said. Earlier, the storm passed over Bangladesh’s Saint Martin’s Island, causing damage and injuring people, but turned away from the country’s shores before landfall.

Myanmar’s military information office said the storm had damaged houses, electrical transformers, cell phone towers, boats and lampposts in Sittwe, Kyaukpyu, and Gwa townships. It said the storm also tore roofs off of sport buildings on the Coco Islands, about 425 kilometres southwest of the country’s largest city, Yangon.

Rakhine-based media reported that streets and basements of the houses in Sittwe’s low-lying areas were flooded, and that people in low-lying areas were trapped in their houses and unable to communicate.

Much of the area is cut off from telephone and Internet service after high winds crumpled cell phone towers.

Roxy Mathew Koll, a scientist at the Indian Institute of Tropical Meteorology in Pune, said cyclones in the Bay of Bengal are becoming more intense more quickly, in part because of climate change.

### EVEN LIMITED ARSENIC EXPOSURE CAN MAR COGNITIVE ABILITY: STUDY

Though it is well known that ingesting high levels of arsenic from contaminated groundwater in India has been linked to a range of ailments, a recent peer-reviewed study suggests that even low levels of arsenic consumption may impact cognitive function in children, adolescents, and young adults.

The research study, which is part of a bigger investigation into how a range of environmental and biological factors affect neurological and cognitive development in young people, also found that those exposed to arsenic had reduced grey matter (brain tissue that is vital to cognitive functions) and weaker connections within key regions of the brain that enable concentration, switching between tasks, and temporary storage of information.

“Chronic exposure to arsenic could be creating a ‘silent pandemic’ affecting large portions of the global population,” say the authors in the study published in the latest issue of the peer-reviewed journal, JAMA Network Open.



## THE NEW ALZHEIMER'S DRUG: WHY DONANEMAB, YET TO BE APPROVED, HAS GENERATED EXCITEMENT

Within a year, a second drug has been found effective in checking cognitive decline in people with early Alzheimer's. Developed by the pharmaceutical giant Eli Lilly, Donanemab was found to slow down cognitive decline by 35% when compared with a placebo in a phase III trial.

The two recent drugs don't stop or reverse Alzheimer's. Their results have still excited neurologists, because over the years, despite heavy investments, trial after trial for Alzheimer's medications has failed.

### What are the findings?

Over an 18-month period, the trial met the primary endpoint of slowing cognitive decline in those with early Alzheimer's. Along with a 35% slower cognitive decline in those who received the drug, it noted a 40% less decline in people's ability to do day-to-day tasks.

This result was based on data from 1,182 patients with intermediate levels of tau protein, which is associated with the severity of Alzheimer's. Interestingly, the drug slowed meaningful cognitive decline even when the data of 552 patients with high levels of tau – representing those in the later stage of the disease – was added to the results. When results from both the populations were combined, cognitive decline slowed down by 22% in 18 months.

More importantly, the study found that there was no cognitive decline in 47% of the people who received the drug as compared with 29% of those who received a placebo.

To be sure, these are the findings that have been announced by the company in a statement, and a detailed study is yet to be published. More data could also become available when the company applies for regulatory approvals.

### How does the drug work?

Donanemab is a monoclonal antibody that targets the abnormal plaques of amyloid beta protein characteristically seen in brain images of those with Alzheimer's. Its mechanism of action is similar to Lecanemab, the drug developed by Japanese and American companies Eisai and Biogen that received a fast-track approval from the FDA earlier this year.

Another drug by Eisai and Biogen called Aducanumab, which was the first Alzheimer's drug to receive approval in 2021 after decades, also has a similar mechanism of action.

All three of them are linked to similar side effects – temporary swelling and tiny bleeds in the brain, called amyloid-related imaging abnormalities (ARIA). Researchers believe this class of monoclonal antibodies weaken blood vessels as they attack the amyloid plaques, resulting in the side-effects.

“The side-effects were more with Aducanumab and there weren't any functional benefits. Lecanemab has fewer side-effects and has shown functional improvement to offset the risks. The results announced for the new drug show it has a similar safety profile,” said Dr MV Padma Srivastava, head of the neurosciences centre at the All India Institute of Medical Sciences (AIIMS).





Eli Lilly reported temporary swelling in the brain in 24% patients with visible symptoms in 6.1%. It also reported micro-haemorrhages in 31.4% participants as compared with 13.6% in the placebo group.

#### **How do the two drugs compare with each other?**

Although there is no head-to-head trial to compare the results of Donanemab with its predecessor Lecanemab, both have used similar scales to measure the impact of the medicines.

The 35% slower cognitive decline is measured using a scale called integrated Alzheimer's Disease Rating Scale (iADRS). This equates to 37% on the Clinical Dementia Rating-Sum of Boxes (CDR-SB), the scale used by Lecanemab. In the case of Lecanemab, a phase III trial on 1,795 participants had found cognitive decline slowed by 27%.

The scales assess performances of the patient in six areas — memory, orientation, judgment and problem solving, community affairs, home and hobbies, and personal care.

Another difference in the two drugs is the dosage. Lecanemab is given once every two weeks intravenously. Donanemab, on the other hand, is administered once a month and is stopped once patients reach a certain threshold for amyloid levels.

#### **Why are the findings significant?**

While the cases of Alzheimer's are on the rise – an estimate suggests that India's burden of dementia, of which Alzheimer's is a part, will increase to 14 million by 2050 – scientists are yet to agree upon what causes the disease.

Now, the consecutive success of three therapies in two years in slowing cognitive decline in patients with early Alzheimer's establishes more firmly the theory that one of the main causes of the disease are the abnormal clumps of amyloid beta protein around brain cells.

However, others believe that Alzheimer's could be an autoimmune disorder where the body's immune system cannot distinguish between brain cells and the fats that make up the envelope of bacteria.

Still others believe that Alzheimer's is caused by excessive deposition of iron in the brain and depletion of an antioxidant called glutathione, which keeps the iron levels in check.

Dr Padma said, "A lot of research has happened and is ongoing. So far, most have been off bull's eye. That is one of the reasons for excitement over these medicines."

She however, remained cautious, saying that the medicines have followed the patients only for a small duration of 18 months. "We are yet to see how the disease progresses over longer periods."

She said that with the high cost of therapies being a major road-block to access, India should still focus on preventing Alzheimer's as much as possible.

#### **How can Alzheimer's be prevented?**

Lifestyle modifications that are known to reduce risks of other non-communicable diseases, like diabetes and hypertension, are also associated with a lower risk of Alzheimer's. Doctors prescribe a healthy diet, exercising regularly, sleeping well, and reducing the risk of diabetes and heart disease. They also suggest stopping smoking and reducing drinking.



Other than that, doctors suggest that people, especially the elderly and those with family history, should keep their brains active and engaged. Solving puzzles, learning new languages or new skills, and going out and making friends can all help.

## EXPLAINING MITOCHONDRIAL DONATION TREATMENT: HOW A BABY HAS THREE PARENTS

The announcement that a baby was born using three persons' DNA in the U. K. on Thursday caused the stir that news of this kind was expected to evoke. The baby, technically, has three parents, deriving the mitochondria from a donor apart from the genetic material (DNA) from biological parents. Pioneering technology was used to facilitate this, in order to prevent the child from inheriting the mother's mitochondrial disease.

### Why did the baby need 'three parents'?

The baby carried most of its DNA from its parents, and a minor per cent from the donor, whose mitochondria has been used while fertilising the egg.

Mitochondria are basically the powerhouses of the cells. They generate energy, and thus are also responsible for cell function in the human body. Certain defects might occur impacting the way the mitochondria produces energy for the cells (especially in the 'energy-hungry' tissues of the brain, nerves, muscles, kidneys, heart, liver), and thereby impacting cell function. The diseases that arise out of such mitochondrial mutations are called mitochondrial diseases. When the mitochondria are impaired and do not produce sufficient energy, it affects how organs function, leading to a broad assortment of symptoms across the body, including brain damage, organ failure and muscle wastage. The symptoms get more and more debilitating as a child grows, and have no cure, but can be treated. Some estimates put the incidence of mitochondrial diseases as one in 5,000 people.

In this case, the mother had a mitochondrial disease she was intent on not passing on to her baby. She also did not want to have a donor egg, for the baby would carry the genetic material of the donor.

### What is the scientific process?

Mitochondrial diseases are only passed on by the mother, and research has been attempting to find a way for protecting the infant from inheriting the disease. Here, through an advanced in vitro fertilisation technique developed and refined by the Newcastle Fertility Clinic, the baby's biological father's sperm was used to fertilise the eggs from the biological mother, who has a mitochondrial disease, and a third, female donor with clear mitochondria, separately.

Then, the nuclear genetic material from the donor's egg is removed and replaced with the genetic material from the biological parents'. The final product — the egg — which has the genetic material (DNA) from the parents, and the mitochondria from the female donor, is implanted in the uterus, and carried to full term to yield a baby who will be free from the mother's mitochondrial disease. This process is termed Mitochondrial Donation Treatment (MDT).

Priya Selvaraj, Scientific and Clinical Head, GG Hospitals, Chennai, an IVF centre, says: "If we are talking about inheriting genetic mitochondrial diseases then it's maternal. That's why this particular technique is of relevance. This is specifically only for couples who wish to have their genetic child and are not okay with using a donor egg. With this special process, the final



cytoplasm (which holds the genetic material and mitochondria) has healthy mitochondria while the genetic material belongs to the biological parents.”

#### **Is there a law to facilitate MDT?**

The Guardian reported that “research on MDT, which is also known as mitochondrial replacement therapy (MRT), was pioneered in the U. K. by doctors at the Newcastle Fertility Centre.... to help women with mutated mitochondria to have babies without the risk of passing on genetic disorders.”

The progress in research led the U. K. government to amend the law allowing the procedure in 2015. It was further added that it was two years later that the Newcastle clinic became the first centre to get a licence to perform it, and the first few cases were approved in 2018. “Approval is given on a case-by-case basis by the U. K.’s Human Fertilisation and Embryology Authority (HFEA), which has given the green light for at least 30 cases,” the paper said. While details of the cases were not revealed to the media to protect the identity of the patients, a freedom of information application by The Guardian revealed that there were “less than five cases”.

The Newscientist reported in 2016 of a Jordanian baby born of ‘three parents’, with a technique employed by the team led by John Zhang at New Hope Fertility Centre in New York, but working in Mexico.

#### **Are there any side effects to the procedure?**

The Guardian, quoting a Pubmed article from February this year, has mentioned that sometimes it is possible that a small amount of the maternal mitochondria with errors may get passed on during the procedure. Dr. Sevaraj makes the case for more information on the process itself, “while largely helpful, the procedure is not without these minimal risks. As for the process, they use terms such as reversion or reversal and it’s inexplicable as of now. More published data is needed to establish consensus.”

### **LONG COVID: A LINGERING PROBLEM REQUIRING GREATER ATTENTION**

The World Health Organization (WHO) defines long COVID as the continuation or development of new symptoms (beyond three months after the initial infection) lasting for over two months with no alternative explanation. Studies have attempted to determine how commonly it occurs. However, since there are several symptoms reported by those who suffer from long COVID, classification has become difficult. For instance, a study that uses tiredness as a criterion could overestimate the prevalence, as that symptom is already common among the general population.

A study of long COVID from AIIMS, Delhi during the first wave reported its incidence to be as high as 10%. More recent studies estimate the true incidence to be around 5%, which implies that one out of 20 patients with COVID-19 go on to develop long COVID. While gradual recovery has occurred in some cases, this has not been the case for others. For instance, a paper from Kerala reports that 62% of long COVID patients who became unemployed following their initial illness remained so even at 10 months post-infection.

Across the world, millions continue to suffer from long COVID, and a study last year by the Atlanta-based CDC found that nearly one-fifth of people in the U.S. who had the disease in the last two years continued to suffer from long COVID.



The impact of any disease is assessed based on certain outcomes. For COVID-19, death is a frequently discussed hard outcome measure. However, long COVID is a relatively soft outcome because its onset is more insidious and its diagnosis is less certain. Many people experiencing long COVID do not rush to the doctor, and among those who do, a diagnosis is seldom made.

Frequently, such people are ignored as 'psychological' or 'anxiety-related'. Unfortunately, there are no diagnostic tests such as X-rays, CT scans, or blood tests to confirm long COVID. Therefore, a sizeable number of patients with long COVID go undetected.

Research is ongoing to determine why only some individuals develop long COVID. Some studies have found that it is more common in women, but it has not been linked to any specific age group or the severity of the initial infection. Initially, long COVID was thought to be an autoimmune phenomenon, and some believe it is due to persistence of the virus in remote parts of the body, such as the gut. Reactivation of other viruses in the body is also implicated. There is evidence of an abnormal immune response in long COVID, but it is not clear what drives this response or what can be done to alleviate it.

At present, there are no approved drugs for treating long COVID, and multiple clinical trials are currently under way. The WHO said the best way to prevent long COVID is to avoid getting infected with SARS-CoV-2 virus.

Preventing COVID-19 on a forward timeline is challenging for many reasons. Firstly, many infections occur without symptoms. Second, the virus is constantly evolving to escape human immune responses arising from vaccination and/or prior infection. This means that repeated bouts of COVID-19 can be expected, especially when precautions are not followed during a regional surge. A recent study published by the CDC found that 15% of reinfections occurred as early as two months after initial infection. Every (re)infection has a possibility of causing long COVID.

### **Pandemic fatigue**

The recent declaration by the WHO ending the COVID-19 public health emergency of international concern is misunderstood as the end of the pandemic itself. Blame it on pandemic fatigue, despite the WHO's assertion that COVID-19 continues to be an "established and ongoing health issue", people end up taking home a different message. For them, the declaration of the end of the public health emergency is tantamount to the pandemic coming to an end. This could worsen the spread of the virus.

Recognising the existence of long COVID and continuing to implement regionally appropriate mitigation measures when the situation so demands will help in reducing the negative impact of the pandemic on global health and productivity.

## **PERIOD POVERTY LEAVES 500 MILLION PEOPLE IN MENSTRUAL OBLIVION**

Menstruation is a natural biological process experienced by 24%-26% of the global population aged 15-49. With an average menstrual span of 35 years, individuals require approximately 15,000-20,000 disposable sanitary pads or vaginal tampons during their lifetime. This means approximately 300 million women and transgender, non-binary individuals menstruate daily, amounting to a staggering 1.8 billion monthly. Unfortunately, period poverty affects nearly 500 million individuals, particularly those in low-middle-income and low-income groups, due to limited access to safe menstrual products.

**3<sup>RD</sup> FLOOR AND 4<sup>TH</sup> FLOOR SHATABDI TOWER, SAKCHI, JAMSHEDPUR**





### **Addressing period poverty**

Various factors, including lack of access to clean water, sanitation facilities, and inadequate sexual health education, perpetuate period poverty. The consequences of period poverty extend beyond health and become a complex public health, social, and environmental issue. To ensure equitable development, period poverty must be addressed alongside other health indicators such as maternal, neonatal, and infant health.

### **Menstrual stigma**

Menstruation is often shrouded in myths, taboos, and patriarchal norms, leading to a negative perception in many societies. However, menstrual health is intrinsically linked to six of the United Nations' Sustainable Development Goals: No poverty, good health and well-being, quality education, gender equality, clean water and sanitation, all to be achieved by 2030. Recognising menstrual health as a significant population health indicator is essential to achieving these goals.

### **Impacts on education and health**

Limited access to water and sanitation facilities hampers education, with nearly 25% of girls unable to attend school due to menstrual-related challenges. Additionally, approximately 50% of menstruating women in economically disadvantaged countries cannot afford safe menstrual products. Poor menstrual hygiene can lead to reproductive and urinary tract infections, resulting in infertility and complications during pregnancy. Educating communities about menstrual hygiene and providing free products by community health workers and nurses can alleviate these issues.

### **Environmental consequences**

Disposable sanitary pads significantly contribute to environmental pollution, as each pad takes 500-800 years to degrade or must be incinerated, releasing toxic chemicals. With its limited land space and rising non-communicable diseases, advocating for reusable menstrual products has become imperative in India

### **Menstrual health as a rights issue**

Gender inequality continues to persist as a challenge throughout the evolution of human civilisation. While progress has been made in areas such as voting rights, education, property ownership, work opportunities, and equal pay, menstruation remains an overlooked aspect in the fight for gender equality. It is crucial to recognise that menstrual health is not merely a health or environmental issue but a fundamental rights issue.

## **VEGETARIAN OR PESCATARIAN DIET?**

Last month, the American Heart Association released a scientific statement listing the four best diets, which include the Dash (Dietary Approaches to Stop Hypertension), the pescatarian, the Mediterranean, and vegetarian. While there are many similarities among all these — they all emphasise whole grains, fruits, legumes, nuts, and seeds — there are some subtle differences. Here, we look at the two most applicable to Indians — the pescatarian and vegetarian



### The vegetarian diet

“Today, for almost all health goals, a vegetarian diet seems to be having a positive impact,” believes Khushboo Jain Tibrewala, a Mumbai-based nutritionist. She says most plant-based foods are extremely nutrient dense, adding that “In addition to fibre, every vegetable gives minerals, vitamins, and micronutrients that together create a healthy body.” One challenge with the vegetarian diet is protein (the target for most people is 0.8-1 gram of protein per kilogram of ideal body weight). “In order to meet the protein requirement, just try to get about 20-25 gram (i.e. 1 cup of dal, curd or Greek yoghurt or a palm-sized piece of tofu) at every meal and focus on diversity.” Soak dals and beans for 12-18 hours before cooking.

### The pescatarian diet

Imagine a vegetarian diet with the occasional serving of seafood. This is nutritionally the most wholesome, says Tibrewala. “It gives you the benefits of a vegetarian diet and the added benefit of good-fat seafood”. Also, since Indian diets are most deficient in omega-3 fatty acids, fatty fish like mackerel or wild sardines are good options. She advises 200 grams twice or thrice a week to combat the danger of mercury as well as persistent organic pollutants (POPs, such as DDT), both toxic. Including foods that help the body reduce heavy metals helps: coriander leaves, celery juice, red-purple fruits and beetroot and jamun.

### The verdict

If you like fish and are not restricted by cultural or religious practices, add a few servings. If you can't, plan your vegetarian meals to include protein. In either diet, limit intake of junk and ultra processed food.

## ARE ARTIFICIAL SWEETENERS HARMFUL FOR YOUR HEALTH? HERE'S WHAT THE WHO HAS RECOMMENDED

The World Health Organisation on Monday (May 15) recommended against using artificial sweeteners to achieve weight loss and prevent lifestyle diseases such as diabetes. The report emphasised that while there was a need to cut intake of sugar, it should not be replaced by artificial sweeteners.

Artificial sweeteners provide the sweet taste with very little to no calories. Many diabetics use the sweeteners in their tea and coffee, but there is a growing market for packaged foods and beverages using these sweeteners to offer low-calorie options.

“WHO suggests that non-sugar sweeteners (NSS) not be used as a means of achieving weight control or reducing the risk of non-communicable diseases,” was the highlight of 90-page report based on nearly 283 studies.

### What has WHO said in its recommendation on artificial sweeteners?

While there could be some weight-loss and reduction in Body Mass Index in the short term as the artificial sweeteners bring down the calories consumed, but in the long run they have been linked to weight gain, the WHO report said. The sweeteners have also linked to an increased risk of Type-2 diabetes, cardiovascular diseases, and mortality in the long run. Some low certainty data also linked the use of such artificial sweeteners to bladder cancer and preterm birth when consumed by pregnant women.