



# CURRENT AFFAIRS for UPSC

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DreamIAS



## INTERNATIONAL

### PRAGMATIC PROGRESSIVE

Indian-American Congressman Ro Khanna, 46, led a bipartisan congressional delegation to India last week. During the visit, he attended the Independence Day celebrations at the Red Fort and met Prime Minister Narendra Modi and External Affairs Minister S. Jaishankar, among others. Media reports suggested that human rights and the treatment of minorities were the major agenda of his visit. While he did meet with victims of the recent communal violence in Haryana, as well as representatives from the Kuki community from Manipur, the delegation's agenda also included trade ties, technology transfer, and defence cooperation.

Mr. Khanna is a member of the progressive wing of the Democratic Party, alongside the likes of Alexandria Ocasio-Cortez, Pramila Jayapal, Ilhan Omar and Rashida Tlaib. He is the co-chair of the U.S. Congressional Caucus on India and Indian-Americans.

He likes to highlight his connection with India, especially the fact that his grandfather Amarnath Vidyalankar was a freedom fighter who went to jail with Mahatma Gandhi and later became a Member of Parliament from the Congress party.

In 2019, in the days following India's dilution of Article 370, Mr. Khanna had tweeted, "It's the duty of every American politician of Hindu faith to stand for pluralism, reject Hindutva, and speak for equal rights for Hindus, Muslims, Sikhs, Buddhists and Christians. That is the vision of India my grandfather Amarnath Vidyalankar fought for."

His statement sparked an immediate and vicious backlash from the Hindutva ecosystem. In the four years since, political observers have noted a distinct softening of his stance toward Hindutva, and his progressive credentials have begun to attract greater scrutiny. Many attribute this subtle shift to the increasing clout of Hindu nationalists, both among the Indian diaspora in the U.S., and in American politics.

Indian-Americans, who number around four million, are the second largest immigrant group in the U.S, after Mexicans. The constituency Mr. Khanna represents, California's 17th congressional district, is remarkable for two reasons. It roughly overlaps with what the world likes to call 'Silicon Valley', and it is a district where Asian Americans are in the majority. Mr. Khanna has been effective in leveraging both these constituencies for his political advances.

#### **The interlocutor**

Mr. Khanna is a second generation immigrant. Born in Philadelphia, Mr. Khanna studied economics from the University of Chicago before graduating from Yale Law School. He subsequently worked as an intellectual property lawyer, with clients from the tech industry. As a Congressman elected from Silicon Valley, he has fashioned himself as a 'progressive capitalist' — someone who is not only an effective interlocutor between the messianic fantasies of tech billionaires and federal regulators, but also between the libertarian impulses of IT employers and the social needs of their employees.

His branding as a progressive Democrat concerned with human rights issues, though a bit frayed, stands for now. But civil rights groups in the U.S. have been vocal in their criticism of his proactive lobbying — which involved orchestrating a bipartisan letter to Speaker Kevin McCarthy — for Prime Minister Narendra Modi to address a joint session of the U.S. Congress.

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Mr. Khanna has responded to this criticism in two ways: first, by pointing to India's strategic importance, both as a geopolitical ally, and for the U.S.'s economic 'decoupling' from China; second, by arguing that it is better to engage with regimes accused of human rights violations rather than lecture them from a moralistic pulpit.

Having started out as a progressive idealist in the Bernie Sanders mould, Mr. Khanna's progressivism seems to be settling — some might say 'maturing' — into a Clinton-like pragmatist mode as he masters the difficult art of juggling the contradictory expectations of political constituencies.

#### RUSSIAN MERCENARY CHIEF YEVGENY PRIGOZHIN FEARED DEAD IN PLANE CRASH

The 62-year-old Wagner chief spearheaded a mutiny against Russia's top Army brass on June 23-24; Russian officials say he was listed as a passenger on the private jet that carried 10 persons and had no survivors following the crash near Moscow

Russian mercenary chief Yevgeny Prigozhin was listed as a passenger on a private jet which crashed on Wednesday evening north of Moscow with no survivors, the Russian authorities said.

There was no confirmation that Mr. Prigozhin was physically on board and Reuters could not immediately confirm that he was on the aircraft.

Russia's Emergency Situations Ministry said in a statement that the aircraft travelling from Moscow to St. Petersburg had crashed near the village of Kuzhenkino in the Tver Region.

Mr. Prigozhin, 62, spearheaded a mutiny against Russia's top Army brass on June 23-24 which President Vladimir Putin said could have tipped Russia into civil war.

The mutiny was ended by negotiations and an apparent Kremlin deal which saw Mr. Prigozhin agree to relocate to neighbouring Belarus. But he had appeared to move freely inside Russia after the deal nonetheless.

Mr, Prigozhin, who had sought to topple Defence Minister Sergei Shoigu and Valery Gerasimov, chief of the general staff, on Monday posted a video address which he suggested was taken in Africa.

#### **Utkin feared dead**

Unconfirmed Russian media reports said that Dmitry Utkin, Prigozhin's right-hand man, was also on board and that Mr. Prigozhin and his associates had attended a meeting with officials from the Russian Defence Ministry.

Reuters could not confirm that and there was no immediate comment from the defence ministry or the Kremlin.

#### EXPRESS VIEW ON SAUDI AND IRAN: WELCOME DETENTE

Iranian foreign minister Hossein Amirabdollahian's visit to Saudi Arabia this week is a first since 2015, when then Iranian foreign minister, Javad Zarif, had travelled to Riyadh to offer condolences on the death of King Abdullah. The visit comes five months after Saudi Arabia and Iran agreed to resume diplomatic ties, in a deal in March this year widely perceived to be brokered by China. Behind the scenes, Oman and Iraq are said to have helped the negotiations between the two sides.

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Amirabdollahian, who met Saudi Crown Prince Mohammed bin Salman in Jeddah, called the discussions as “frank, beneficial and productive”, the choice of words indicating that the desire to normalise bilateral ties is bearing fruit. Saudi foreign minister Prince Faisal bin Farhan visited Iran in June this year.

While the diplomatic moves to improve ties are making steady progress, as per available indications, the history of their ties has witnessed several ups and downs over the years. Ties have been strained over the leadership role in the region between the Shia-led Iran and the Sunni-led Saudi Arabia. Post the Iranian Revolution in 1979, the two sides have harboured suspicions about each other’s intentions. Iran had accused Saudi Arabia of supporting Baghdad in the Iran-Iraq war (1980-88). Saudis were accused of supporting the rebels against Iran-backed President Bashar al-Assad in the civil war that has raged in Syria since 2011. The Iranian nuclear programme has also furthered the suspicions. Ties worsened in 2016 when Saudi Arabia executed a top Shia cleric, after which Iranian protesters attacked the Saudi embassy in Tehran, leading to cutting off of diplomatic ties. Before that diplomatic ties had been cut off in 1987-88, when tension between the regional rivals peaked over the death of Iranian pilgrims in clashes in Mecca and attacks on the Saudi embassy in Tehran. With the reliability of the US as a partner in question and China in play, the Saudi-Iran rapprochement is aimed at regional stability.

For India, which has over 80 lakh Indians in the West Asian and the Gulf region, this stability is extremely important. Also, India’s energy security is dependent on how well its ties are with the two major sources of crude. Abdollahian said in a social media post after meeting the Saudi Crown prince, adding that the countries “agree on the security and development of all in the region”. India has maintained close ties with both Riyadh and Tehran. Delhi, no doubt, will watch these developments carefully, as it has implications for its national interest. And it would not want to lose out vis-a-vis China.

#### A CIA-BACKED 1953 COUP IN IRAN HAUNTS THE COUNTRY WITH PEOPLE STILL TRYING TO MAKE SENSE OF IT

Seventy years after a CIA-orchestrated coup toppled Iran's prime minister, its legacy remains both contentious and complicated for the Islamic Republic as tensions stay high with the United States.

While highlighted as a symbol of Western imperialism by Iran's theocracy, the coup unseating Prime Minister Mohammad Mossadegh — over America's fears about a possible tilt toward the Soviet Union and the loss of Iranian crude oil — appeared backed at the time by the country's leading Shiite clergy.

But nowadays, hard-line Iranian state television airs repeated segments describing the coup as showing how America can't be trusted, while authorities bar the public from visiting Mossadegh's grave in a village outside of Tehran.

Such conflicts are common in Iran, where “Death to America” can still be heard at Friday prayers in Tehran while many on its streets say they'd welcome a better relationship with the U.S. But as memories of the coup further fade away along with those alive during it, controlling which allegory Iranians see in it has grown more important for both the country's government and its people.

The August 1953 coup stemmed from U.S. fears over the Soviet Union increasingly wanting a piece of Iran as Communists agitated within the country. The ground had been laid partially by the



British, who wanted to wrest back access to the Iranian oil industry, which had been nationalized earlier by Mossadegh.

Though looking initially like it failed, the coup toppled Mossadegh and cemented the power of Shah Mohammad Reza Pahlavi. It also lit the fuse for the 1979 Islamic Revolution, which saw the fatally ill shah flee Iran and Ayatollah Ruhollah Khomeini usher in the theocracy that still governs the country.

## BACKSEAT DRIVING

On the face of it, the election of Srettha Thavisin, a property tycoon from the Pheu Thai party, as Thailand's Prime Minister marks a shift towards civilian governance from almost a decade of military rule. But that is not the full story. Move Forward, the party that won the May parliamentary election, was prevented from forming the government by the military-royalist nexus because of its progressive and anti-establishment views, while Pheu Thai, the second largest party, was given a chance after it agreed to form a coalition with military-aligned parties. Pita Limjaroenrat, leader of Move Forward, had led a spirited campaign, offering a deal to voters that included ensuring economic justice, keeping the military in check and amending the controversial *lèse-majesté* law that shields the monarchy from public criticism. Mr. Pita, whose coalition had a clear majority in the elected lower House of Parliament, had tried to form the government twice, but was blocked by the military-appointed Senators. He was later barred from Parliament over allegations of hiding details of his shares in a now defunct media company. The constitutional court is hearing a petition against Move Forward's promise to amend the *lèse-majesté* law, which could lead to its dissolution.

Thailand has had phases of democratic experiments but the military has always maintained an outsized influence. Over the past century, the Thai military has carried out over a dozen coups, with all being endorsed by the monarchy. The military's stranglehold has also produced populist resistance off and on. The Pheu Thai party itself is the third incarnation of the pro-democracy movement founded by Thaksin Shinawatra, who was ousted from power in 2006. Prior to the May elections, Pheu Thai had vowed to keep the military out of politics, only to walk back on its promises. It now says that it will not support amending the *lèse-majesté* law, citing a lack of consensus. Incidentally, Mr. Thaksin, who was sentenced in absentia to eight years in prison for "corruption" and "misuse of power", returned after 15 years of exile on the day Parliament elected Mr. Srettha as Prime Minister. Mr. Thaksin was arrested on arrival, but his return raises questions on whether the Pheu Thai might cut a deal with the military to ensure his safety (and a probable royal pardon) in exchange for not harming the interests of the establishment. Whatever Thai politicians might call it, this is not a democratic transition. The military has moved to backseat driving, keeping its interests intact and flouting the spirit of the election results. Mr. Srettha could find it hard to tackle Thailand's myriad challenges, that include reviving a sluggish economy and advancing democratic rights, when his government is remote-controlled by the establishment.

## MYANMAR'S 'KILLING MACHINE'

Circa 1941, seven years before Myanmar (then Burma) was liberated from the British colonial rule, a ceremony was afoot in Bangkok. It featured the Thirty Comrades, a revolutionary group that spearheaded Burma's Independence movement. The men drew each other's blood with a single syringe, mixed it in a silver bowl with alcohol and quaffed the potion.



A drop of blood to seal a vow of loyalty to the nation, and the Tatmadaw — Burmese for “army” — was born.

The protagonists have ruled Myanmar for most of its existence, courting the label of a ‘killing machine’, designed to eliminate any threat — internal or global, real or contrived. They claim to have a standing force of 5,00,000 men, a rank of fighters who have unleashed some of the most terrible horrors, including mass rape, torture and genocidal crimes against ethnic minorities. In 2021, they ruthlessly consolidated power by ousting the democratically elected leader, Daw Aung San Suu Kyi, jailing her on corruption charges and declaring a state of emergency.

Bloodshed soaks their history, and that of Myanmar, which is the site of the longest-running armed conflict in the world. The Tatmadaw has built a ‘state within the state’, insulated from ‘enemies’ beyond, observers note.

### **A violent history**

“The modern state of Burma was born as a military occupation,” historian Thant Myint-U writes. The Burma Independence Army (BIA) collaborated with Japan against the British and was joined by other anti-colonial militias that shaped the contours of modern-day Tatmadaw. Among the ranks of the BIA was Aung San, the architect of Myanmar’s independence and Ms. Suu Kyi’s father.

Myanmar limped to freedom in 1948, but descended soon into ethnic factions due to internal conflict. In 1962, the military staged the first of its four coups to take control from an elected government. They rewrote the citizenship law in 1982 to automatically grant citizenship to different ethnic groups, excluding minorities such as the Rohingya Muslims. The 8888 uprising (on August 8, 1988) marked the first pro-democracy revolt led by student activists, but it was brutally put down in which about 5,000 people were killed. The Tatmadaw set out to ‘reconsolidate’ Myanmar “to create conditions for passing authority to a constitutional government”, analyst Robert Taylor observed.

Ms. Suu Kyi’s National League for Democracy (NLD) fizzed into existence, but she was placed on a 15-year-long house arrest. The Tatmadaw’s political foothold simultaneously strengthened, curbing resistance such as the 2007 Saffron revolution. The regime in 2008 adopted a Constitution which ensured the military never falls prey to civilian control. In 2011, the Tatmadaw uncharacteristically agreed to hold parliamentary elections and implement democratic reforms as part of a ‘liberalisation’ policy. They were in a power-sharing agreement with Ms. Suu Kyi’s government for five years, before the 2021 coup.

### **Political institution**

Understanding the Tatmadaw raises three challenges, scholar Andrew Selth argued. How do you measure a country’s military capability? What is the context of modern Myanmar? Is it possible to objectively articulate Tatmadaw’s role?

Researchers note the military came to be a desirable career and a site of social mobility, in the context of corruption, a flailing economy and ethnic factions. “The killers in uniforms [learn] that they are virtuous defenders of the country, of the race and of Buddhism,” human rights activist Dr. Maung Zarni told The Diplomat. “Never hesitating, always ready to sacrifice blood and sweat is the Tatmadaw,” display lofty banners on the streets. In 1989, they changed the country’s official name to Myanmar. Myanmar is made up of 130 ethnic minorities, with Buddhist Barmars forming the majority. Many Barmars serve in the upper echelons of the military.



The Tatmadaw owns banks, hospitals, schools, farms; they run publishing houses, stations, a film industry which produces tales valorising the army. The Tatmadaw, the 15th largest military in the world, accounts for 44% of the government's expenditure.

Unlike other military juntas, the Tatmadaw are less politicians in uniforms than 'war fighters', adhering to a script of ultranationalism, as Mary Callahan wrote in her book *Making Enemies*.

The military tells many stories about itself, to itself: In the constricted world of the Tatmadaw, an enemy is always lurking about. Ms. Suu Kyi's November 2020 victory was portrayed as electoral fraud; American philanthropist George Soros is accused of funding pro-democracy activists and politicians; a 'rapacious' Muslim organisation is attempting to destroy the Buddhist faith.

A former military official told *The New York Times* that in his first year of training, he was shown a film that portrayed the 1988 democracy activists as "frenzied animals slicing off soldiers' heads".

Since its formation, the Tatmadaw are fighting on multiple fronts, including roughly 250 local defence groups and ethnic armed organisations. Gwen Robinson, a Myanmar expert, told the BBC that this degree of resistance has accustomed them to using lethal force and violence within their own borders. "It's shaped the Tatmadaw into this ruthless fighting machine that will just follow orders robotically."

#### **Moment of crisis**

The Tatmadaw's mythmaking is showing signs of leakage post the 2021 military coup, observers say. There are reports of low morale, defections and desertions; some estimates put the size of Myanmar's military as low as 95,000. Recruitment levels have dropped, combat units are poorly trained amid rumours about a widening gulf between the privileged elite and the ranks. A report found the Tatmadaw exerts real control in only 30%-40% of the territory. The army-backed Union Solidarity and Development party plans to replace the current head with a loyalist to Tatmadaw's chief Senior Gen. Min Aung Hlaing, a reshuffle "aimed at adding more military hard-liners", Chetan Rana wrote in *The Hindu*.

There's a crisis of belief too among majoritarian groups who have witnessed the military killing its own people in the aftermath of the 2021 coup. Some have ceased calling General Aung Hlaing's army (charged with perpetrating the Rohingya genocide and leading the coup) the 'Tatmadaw', a reverential term coined for Burma's 'Royal' Army. They prefer 'Sit-tat' instead, avoiding any reference to glory. Some also use the cruder 'Sit-kew'. Dog soldiers. Scholar Tun Myint argued that the military was once seen as a feared entity (kjau zaja), but their image today is closer to jun zaja, Burmese for a feeling that goes beyond hate.

### **WHAT ARE THE AMENDMENTS TO THE PAKISTAN ARMY ACT?**

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

#### **What are the new amendments?**

The Bill has expanded the ambit of the Army Act by inserting clause 1A in Section 8 of the Act. With this change, the Act will include civilians working in entities affiliated with or controlled by the Pakistan Army like the Fauji Foundation, Army Welfare Trust, Fauji Urea, Fauji Cement, etc. The Bill has added two new sections to Section 26 of the Act. Section 26A on 'unauthorised disclosure', states that "if any person who is or has been subject to this act, discloses or causes to



be disclosed any information, acquired in an official capacity, which is or may be prejudicial to the security and interest of Pakistan or the Armed Forces of Pakistan, shall be guilty of an offence, and on conviction by the court constituted under this Act, be punished with rigorous imprisonment for a term which may extend to five years.” Section 26B prohibits a person who has been subjected to this Act from participating in any kind of political activity for two years “from the date of his retirement, release, resignation, discharge, removal, or dismissal from the service.”

Another notable amendment is in Section 55. Section 55A bars the subject of this Act from getting into any form of engagement, consultation, or employment, directly or indirectly, with any entity that might have a conflict of interest with the Armed Forces of Pakistan and its affiliate entities, while Section 55B outlines the punishment applicable to individuals who, whether currently or previously subjected to this legislation, undermine, ridicule, or scandalise the Armed Forces.

### **Why now?**

The addition of clause 26A must be seen through the prism of the May 9 incident, wherein the supporters of the Pakistan Tehreek-e-Insaf (PTI), the party of former Pakistan Prime Minister Imran Khan, attacked army installations across the country. The information regarding the installations was leaked from within the Army. Part two of the same Section is being seen as designed explicitly for Lt. Gen. (Retd.) Faiz Hameed, former DG of the Inter-Services Intelligence (ISI). Gen. Faiz has been the biggest supporter of Imran Khan while he was in power and after his ouster from power; he is seen as Mr. Khan’s predominant advisor. Mr. Khan had planned to formally bring Gen. Faiz Hameed into the PTI’s fold to rebuild the party, however, this amendment has dashed his plan. The amendments, in general, have been specifically designed to intimidate the veterans who have been supporting the former Pakistan PM by expressing their views on social media and public platforms.

The changes proposed in the Bill are not just about strengthening the power of the Army Chief and dissuading critics. Through the addition of Section 175C (on welfare and rehabilitation), Section 175D (on welfare through affiliated entities), and Section 176E (on national development), the Pakistan Army has formalised its intervention in the functioning of the country in the name of rehabilitating serving, retired, or wounded personnel and families of martyrs as well as in national development and advancement of strategic interests.

### **What are the implications?**

The manner in which the Bill was passed has exposed the government’s docile behaviour towards the Army. The Bill was taken up in the morning without adhering to a two-day notice. Only two senators raised concerns about how the Bill was being pushed through the house. The amendments in the Army Act clearly aim to silence criticism of the Pakistan Army, especially from retired personnel, among whom Mr. Khan holds excellent support.

A section of journalists and human rights advocates have expressed concerns as these amendments would jeopardise the rights and liberties of individuals as well as impose restrictions on the dissemination of information. With the implementation of such draconian laws, the authorities would end up with absolute power to target anybody.

## **FAITH AND VIOLENCE**

Last Wednesday, a mob attacked a Christian colony in Pakistan’s Jaranwala and burned 22 churches and looted a large number of houses forcing hundreds of citizens of the minority

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community to flee to neighbouring areas. The mob demanded that the police hand over two men who they claimed had committed blasphemy. Like previous incidents, the police and other law enforcement forces stood as mute witnesses for days before swinging into action.

This was not an isolated incident. In December 2021, in the industrial town of Sialkot, nearly 50 km from Jaranwala, a Sri Lankan Buddhist, Priyantha Diyanwada, was lynched by hundreds at a factory where he worked as a manager for nearly seven years. Diyanwada was accused of removing a poster with religious remarks.

Pakistan brought terrorism charges against 900 individuals and arrested several persons who were part of the mob. Diyanwada's remains were sent to his family in Sri Lanka. Prime Minister Imran Khan bestowed Tamgha-e-Shujaat, a bravery award, on Malik Adnan, a colleague of Diyanwada who tried initially to protect him from the mob. But the case against the attackers hasn't reached anywhere.

In Pakistan, blasphemy is punishable by death. These incidents showed how the blasphemy laws have become an excuse for vigilantism in the era of social media. In 2011, Governor of Punjab Salman Taseer was gunned down outside a pizza outlet in Islamabad's picturesque Kohsar market, which is known for its cuisine and book stores.

Taseer had boldly taken on the supporters of the blasphemy laws and defended Christian farm worker Asiya Bibi, who was convicted of blasphemy by a court in 2010 and sentenced to death. The sentencing triggered an outcry among liberal Pakistanis which drew Taseer into the issue. Mumtaz Qadri, who fired the shots at him, was Taseer's bodyguard. He was given death sentence by a court in 2016 and executed later, but his grave became a place of worship for those who support the law.

#### **Political links**

Pakistan's Supreme Court overturned the death sentence for Asiya Bibi who was given asylum in Canada in 2019. The case that shook Pakistan showed that the legal system could be moved to defend the life of a person falsely accused of blasphemy, but it is far more difficult to deal with elements that have made blasphemy a case for generating political fortune.

This difficulty is rooted in the history of Pakistan, stretching back to the Zia-ul-haq years when the Hudood ordinances were brought in 1979 as Gen. Zia wanted to make Pakistani laws in sync with Sharia. The region also has a history of religious polarisation going back to the days of the Khilafat movement and the Hindu-Muslim politics of pre-Partition Punjab, when the publication of a controversial book on the Prophet led to the assassination of publisher Rajpal Malhotra or Mahashey Rajpal in Lahore 1929. It is said that the publication was a tit-for-tat act against the publication of a book targeting a Hindu figure.

Current political links between the extremist foot soldiers of Pakistan and political parties are therefore not new and from time to time, such groups have emerged to stoke tensions over blasphemy. Foremost among such contemporary forces is the Tehreek-e-Labbaik Pakistan, which had supported death for Asiya Bibi.

Latest reports on the Jaranwala violence have shown that a few locals who were displaced on Wednesday have returned to the neighbourhood and authorities are trying to restore normalcy. The locals have said the rioters did not belong to Jaranwala and appeared to have come from outside. The reports prompted Karamat Ali, executive director of the Pakistan Institute of Labour



Education and Research in Karachi, to argue that the incident shows that elements within the Pakistani state might be involved in creating it as a diversionary event to steer people's attention from other issues.

## WITH MUSCLE-FLEXING, CHINA STIRS TENSIONS WITH NEIGHBOURS

From the South China Sea to the Line of Actual Control (LAC) with India, China has been more forcefully pushing its territorial claims with neighbours with the aim of dissuading their warming ties with the U.S., a risky strategy that experts said could end up backfiring.

While the latest 19th round talks between China and India, held on August 13 and 14 at the Chushul-Moldo border meeting point, ended with a joint release from both sides unlike in the previous round and an agreement "to resolve the remaining issues in an expeditious manner", the negotiations have been anything but expeditious, Indian officials say, because of a broader hardening Chinese stand in enforcing Beijing's claims along the LAC. Dialling down tensions, officials and experts add, may likely only be tactical moves to create the right atmosphere for a high-level leaders' meeting, even as Beijing continues beefing up its posture along the border.

This dynamic has in recent days also been mirrored in another theatre — in the contested South China Sea, where one among China's fleet of increasingly large and sophisticated coast guard ships deployed water cannons to stop a Philippines vessel to deliver supplies to an already present garrison on the contested Second Thomas Shoal.

### **Warming ties with U.S.**

In Manila, the moves have widely been seen as being aimed at its warming ties with Washington. "China has been upset with the Philippines, more so after the Marcos government renewed security cooperation with the U.S., which now has access to more local military bases," the Manila Times said in an editorial on the incident.

Similarly, Indian officials say as the China-U.S. rivalry has heightened, Beijing has increasingly situated its relations with India only in the context of its ties with Washington, an approach they believe has been a prime driver in worsening India-China relations. External Affairs Minister S. Jaishankar has in several interviews and public remarks suggested Beijing was viewing ties with India through the prism of a third-party.

Since Corps Commander-level talks started in 2020, both have disengaged from five friction points in Galwan Valley, north and south of Pangong Lake, and Patrolling Points 15 and 17A. However, the talks have dramatically slowed down in the past 12 months, when only three rounds of talks have been held and Beijing has made what Indian military officials see as "unreasonable and unacceptable" demands requiring India to give up patrolling rights in the remaining two friction areas in Depsang and Demchok.

Former Foreign Secretary Shyam Saran, who recently visited Beijing for a high-level security form at Tsinghua University, told The Hindu in an interview that "as the level of concern or perception from threats from the U.S. increase, they appear to look at anything that happens between India and the U.S. as being directed at them. They are convinced that America has now decided to put a containment ring around them and that India is becoming a willing partner in that."

If some observers have been puzzled by why Beijing appears to be actively driving its neighbours into closer ties with the U.S. with its actions, Mr. Saran explained that there appeared be "two



views” about this approach within the strategic community in Beijing. “One view is that putting pressure on India will dissuade them from moving closer to the U.S.,” he said. “There is a train of thought that says that, ‘if we do something on the border, then don’t think anyone will help you and don’t provoke us, there will be a price to pay.’”

“The other suggests that China should look at this more closely because India has still followed more or less an independent foreign policy, and has been displaying that with respect to the war in Ukraine, and that the more you use coercive measures against India, the greater will be a risk of India getting closer to the Americans. Both trends of thinking,” he added, “are there in Beijing.”

#### CHINA, BHUTAN HOLD FIRST MEETING ON ‘DELIMITATION’ OF DISPUTED BOUNDARY

China and Bhutan this week held the first meeting of the newly set-up joint technical team on the delimitation of their disputed boundary, as officials from both sides met for four days in China and agreed to speed up a boundary resolution.

A joint press release from Beijing and Thimphu on Thursday said the 13th Expert Group Meeting (EGM) was held in Beijing from Monday through Thursday, and described as an “important outcome” the setting up of a Joint Technical Team on the Delimitation of the China-Bhutan Boundary, which held its first meeting along the sidelines of the EGM. In recent months, both sides have portrayed the long-running talks as picking up speed and nearing towards a possible solution, which would have ramifications for India. They agreed in Beijing to hold the 14th round as soon as possible and to hold the 25th round of boundary talks to “keep the positive momentum”. It did not, however, announce a date for the already much delayed 25th round of boundary talks, which have not been held since 2016.

While there was a two-year gap between the 10th round of the EGM held in April 2021 and the 11th round of the EGM held in January 2023, the last two rounds have been held in relatively quick succession. Experts in India have said any deal between Beijing and Thimphu that accedes to a “swap arrangement” between areas to the North (Jamparlung and Pasamlung valleys) with Doklam to the West would be of concern to India, given the proximity to India’s narrow “Siliguri corridor” that connects northeastern States with the rest of India. India and China were involved in a stand-off in Doklam near the India-China-Bhutan trijunction in 2017. In March, the Bhutanese Prime Minister said in an interview that the process of “demarcating territories” and “drawing a line” could be completed “after one or two more meetings”.

#### Disputed areas

The boundary talks between Bhutan and China began in 1984, and the 24th round was held in 2016. The talks have largely focused on disputed areas to Bhutan’s north, and to its west, abutting the Doklam plateau. However, these have been stalled since 2016, especially after the 2017 Doklam stand-off.

Thursday’s statement said the two sides had talks on “continuously implementing the MOU on the Three-Step Road Map for Expediting the China-Bhutan Boundary Negotiations” and “agreed to expedite and take simultaneous steps to implement the Three-Step Road Map”.

“The two sides also agreed upon keeping the positive momentum of frequent Expert Group Meetings, holding the 14th Expert Group Meeting on the China-Bhutan Boundary Issues as soon as possible and maintaining communication on holding the 25th Round of China-Bhutan Boundary Talk,” it said.



## NATION

### WHY IS BRICS SUMMIT IMPORTANT FOR INDIA?

#### The story so far:

All eyes this week are on Johannesburg, as leaders of the Brazil, Russia, India, China, South Africa (BRICS) grouping are hosted by South African President Cyril Ramaphosa. BRICS is essentially a movement of “emerging economies”, and thus gives a salience to economic issues, but given the geopolitical flux especially after the war in Ukraine, this BRICS summit takes on a new importance. It is, therefore, no surprise that many Western capitals are watching the summit closely.

#### Why is the 15th BRICS summit important?

This BRICS meet comes at an important geopolitical and geoeconomic moment — this is the first in-person summit since 2019 and the COVID-19 pandemic. Even in 2022, when COVID had receded, the remnants of the pandemic remained in China, and the summit was hosted via videoconference. This is also the first in-person meeting since the Russian invasion of Ukraine in 2022, an event that has cast a long shadow not only over global stability, but food, fertilizer and fuel (energy) security. Given its composition, BRICS deliberations are perceived to carry a “counter-western” slant, and will be of importance as the U.S. and EU still hope to try and “isolate” Russia over the conflict. This is also the first summit since Luiz Inácio Lula da Silva returned to power in Brazil, who represents a more socialist, anti-western politics than his predecessor President Bolsonaro.

#### What is in it for India?

For India, this BRICS summit carries special importance. This is the first in-person summit since the military standoff with China at the Line of Actual Control began in 2020, and Prime Minister Narendra Modi will come face to face with President Xi Jinping at the BRICS meet. While they have attended the Shanghai Cooperation Organisation (SCO) summit in Samarkand, and had a brief meeting at the G20 in Bali last year; at the BRICS summit they will be in a very small group of four (with President Putin attending virtually), and will have many opportunities to hold bilateral talks. Ahead of the summit, the 19th round of India-China Corps Commander Level Meeting resulted in a joint statement last weekend, seen as a positive sign ahead of a possible Modi-Xi engagement. This meeting would be significant in terms of resolving the LAC situation, where an estimated 1,00,000 soldiers stand at the boundary on either side. But there are other reasons too why this meeting is necessary. Just over two weeks after the BRICS summit, India will host the G20 summit, and Prime Minister Modi will want to ensure full attendance by the leaders, which include all BRICS members.

In addition, India wants more cooperation from China and Russia that are blocking discussions on a common language for the Leader’s declaration to be released at the summit on September 9-10. Mr. Modi might use the forum for talks on the issues over the paragraphs on Ukraine, climate change, debt financing and others that are being held up by their objections.

#### Who will be there?

Prime Minister Narendra Modi, Chinese President Xi Jinping and Brazilian President Lula will join President Ramaphosa for meetings on August 22-24, and will deliberate on the “Johannesburg Declaration” to be released at the end of the summit. President Xi is also in South Africa for a

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



separate bilateral state visit, while Mr. Modi will club the BRICS travel with a visit to Greece on his way back to Delhi. Russian President Vladimir Putin is not attending “by mutual agreement”, said Mr. Ramaphosa’s office, indicating the issue over Mr. Putin’s appearance at the BRICS, given that there is a warrant issued by the International Criminal Court (ICC) against him, which would have made it difficult for South Africa, an ICC signatory, to ignore. Mr. Putin will attend the summit via video and Russian Foreign Minister Sergey Lavrov will officiate at the event in Johannesburg.

Apart from BRICS leaders, South Africa has invited all 55 members of the African Union (AU) to the event and about 20 other leaders from Asia, South America and small Island States who represent the Global South for sessions on the sidelines of the summit. The message from the invitations is a clear pitch for the developing world to come together on economic issues. In addition, many of the countries that are seeking to join the increasingly important grouping will be represented at leadership levels.

#### **What’s the big item on the agenda?**

During the summit, the leaders of BRICS will confer among themselves, and also take part in the BRICS-Africa Outreach and BRICS Plus Dialogue. A major item on the agenda is on the expansion of BRICS. Conceived of in the early 2000s in a Goldman Sachs paper as a grouping of the fastest growing developing economies not in the G-7, BRIC nations held their first summit in 2009 — and inducted South Africa in 2010. While their economies haven’t lived up to their promise, BRICS has produced some significant outcomes, like the New Development Bank, Contingency Reserve Arrangement for currency, an R&D centre for vaccines and others. More broadly, it is seen as an attractive alternative to the G-7 developed countries “club”. More than 40 countries have shown an interest in joining BRICS, and at least 19 countries have applied formally for membership. Of these, consensus appears to be developing around four countries: Argentina, Saudi Arabia, the UAE and Iran. Mr. Modi’s telephone conversation with Iranian President Ebrahim Raisi on Friday discussed cooperating over “BRICS expansion”, the MEA noted, indicating that some sort of decision on inducting new members is expected.

#### **What else is expected to be discussed?**

BRICS leaders are also expected to take forward earlier talks on intra-BRICS trading in national currencies, although a much-touted plan pushing for a “BRICS currency” to challenge the dollar does not appear to be on the agenda. The Johannesburg Declaration will include language acceptable to all the countries on a number of global developments. In addition, South Africa which has chosen the theme “BRICS and Africa: Partnership for Mutually Accelerated Growth, Sustainable Development, and Inclusive Multilateralism” for the year, seeks to introduce initiatives in its priority areas, including an equitable and just transition on climate change issues; unlocking opportunities through the African Continental Free Trade Area; and strengthening the meaningful participation of women in peace processes. Indian officials will also look out for language proposed by China, by far the biggest economy in the grouping, to promote Beijing’s key initiatives like the Belt and Road Initiative, and the new Global Development Initiative (GDI) as part of an economy roadmap for BRICS.

India had refused to sign onto an Economy Roadmap at the SCO meeting chaired by India in July 2023 for the same reasons.



## CONCRETE ALLIANCE

If there was any doubt about the relevance of the BRICS grouping (Brazil-Russia-India-China-South Africa), which held its 15th Summit in Johannesburg this week, the massive global interest in its outcomes should have put those to rest. Ever since the grouping, set up as a coalition of emerging economies, said last year that it was open to new members, as many as 40 countries from the global south have evinced interest in joining, with at least 22 formal applications. The decision to more than double its membership overnight, from 5 to 11, by inducting four major middle eastern players, Egypt, Iran, Saudi Arabia and the United Arab Emirates, as well as Ethiopia and Argentina, from Africa and South America, respectively, is significant. The enthusiasm is obvious. BRICS has weathered several storms and is today seen, if not as any alternative, as a counter-narrative creator to the western-led G-7 club on diverse issues: from climate change commitments and UN reform to its rejection of unilateral western sanctions against Iran, Russia and Venezuela. By also creating the New Development Bank, which has funded nearly 100 projects so far, instituting a Contingent Reserve Arrangement, and other institutional mechanisms, the BRICS countries have also shown their ability to work on practical initiatives. While the grouping may not yet rival the wealth of the G-7, it does now rival its share of the global GDP (approximately 30% each), and represents a more equitable representation across 40% of the world's population to the G-7 countries that make up just 10%. Once the new members join, six of 10 of the biggest global oil suppliers will be BRICS countries, giving BRICS new heft in the field of energy.

While the battle of proving its *raison d'être* may have been substantially won, the BRICS countries still fall short in showing a coherence of purpose, and are still mired by inner contradictions. The rivalry between India and China has no doubt slowed the grouping down and the induction of arch rivals Iran and Saudi Arabia-UAE, despite their recent *détente*, could well create similar issues for the group in the future. In addition, any overtly political, anti-western stance by BRICS will make India, and other countries in the grouping who walk a tightrope between the global powers, including Egypt, the UAE, Saudi Arabia and Brazil, uncomfortable. Russia's invasion of Ukraine too has caused uneasiness, and BRICS members did not vote as a bloc on any of the UN votes; nor did any of the other members support Russia's actions. Above all, any attempts by China to overpower the group with its strategic or economic vision will require a firm pushback if the foundational idea of BRICS, to assert the strategic autonomy of its members, is to be followed. Eventually it is the promise of shared prosperity and a more democratic model of global governance that attracts so many in the global south to the grouping, and will provide the mortar for an expanded line-up of BRICS countries.

## THE KATCHATHEEVU CONTROVERSY

### The story so far:

On August 18, Tamil Nadu Chief Minister M. K. Stalin revived the debate over Katchatheevu, an uninhabited and barren 285 acre islet about 14 nautical miles off Rameswaram. He reiterated the demand for retrieval of the islet from Sri Lanka, which will, according to him, put a permanent end to the problems of fishermen of the State. Addressing a fishermen's conference in Mandapam of Ramanathapuram district, he pointed out that following his letters to Prime Minister Narendra Modi, fishermen arrested by the Sri Lankan authorities, were released but the boats and fish nets, essential to the livelihoods of the fishermen, had not been returned. Last month, ahead of the visit of Sri Lanka's President to New Delhi, the Chief Minister urged Mr. Modi to raise the issue with the dignitary.



### **When did Katchatheevu become a part of Sri Lanka?**

During June 26-28, 1974, the then Prime Ministers of India and Sri Lanka, Indira Gandhi and Sirim R.D. Bandaranaike, signed an agreement to demarcate the boundary between the two countries in the historic waters from Palk Strait to Adam's Bridge. A joint statement issued on June 28, 1974, stated that a boundary had been defined "in conformity with the historical evidence, legal international principles and precedents." It also pointed out that "this boundary falls one mile off the west coast of the uninhabited" Katchatheevu.

### **How important is Katchatheevu?**

Fisherfolk of the two countries have been traditionally using the islet for fishing. Though this feature was acknowledged in the 1974 agreement, the supplemental pact in March 1976 made it clear that fishermen of the two countries "shall not engage" in fishing in the historic waters, territorial sea and exclusive zone or exclusive economic zone of either of the countries "without the express permission of Sri Lanka or India."

While certain sections of political parties and fisherfolk in Tamil Nadu believe that the retrieval of Katchatheevu would resolve the problem of fishermen having to illegally cross the International Maritime Boundary Line, fishermen of the Northern Province in Sri Lanka say that this would only add to their suffering from the adverse impact of T.N. fishermen using the fishing method of bottom trawling on their territorial waters.

### **What triggered the negotiations between India and Sri Lanka?**

Sri Lanka claimed sovereignty over Katchatheevu on the ground that the Portuguese who had occupied the island during 1505-1658 CE had exercised jurisdiction over the islet. India's contention was that the erstwhile Raja of Ramnad [Ramanathapuram] had possession of it as part of his zamin. According to an article published by The Hindu on March 6, 1968 which was based on an interview of the erstwhile Raja Ramanatha Sethupathi, Katchatheevu was under the jurisdiction of the zamin "from time immemorial". However, during a debate on the matter in Lok Sabha in July 1974, the then External Affairs Minister Swaran Singh said that the decision had been taken after "exhaustive research of historical and other records" on the islet.

### **How was the 1974 pact received?**

The present demand for the Katchatheevu retrieval traces its origin to the opposition that the pact generated in 1974. During the debates in both Houses of Parliament in July 1974, most of the Opposition including the Dravida Munnetra Kazhagam (DMK), All India Anna Dravida Munnetra Kazhagam (AIADMK), Jan Sangh, Swatantara and the Socialist Party, staged walk outs in the two Houses. Former Prime Minister Atal Bihari Vajpayee, who was the Jan Sangh's leader, had contended that the decision to transfer the islet had been taken "behind the back" of the people and Parliament. The then Chief Minister M. Karunanidhi, in 1973 when the talk of the islet transfer had been doing rounds, had urged Indira Gandhi that the popular feeling was in favour of retaining Katchatheevu which "belonged to India and not to Tamil Nadu alone," according to a report published by The Hindu on October 17, 1973. Three months later, he wrote a letter reiterating the stand, a copy of which was released a day after the 1974 agreement was signed. M. G. Ramachandran, founder of the AIADMK, had criticised Karunanidhi for "his failure to guide the Centre properly" on the issue and sought his resignation.



### When did the issue emerge again?

The Katchatheevu issue was revived in August 1991 with the then Chief Minister Jayalalithaa demanding retrieval during her Independence Day address. She later modified her demand to one of getting the islet back through “a lease in perpetuity.” In the last 15 years, both Jayalalithaa and Karunanidhi had approached the apex Court on the matter.

### What has the Centre said?

In August 2013, the Union government told the Supreme Court that the question of retrieval of Kachchatheevu from Sri Lanka did not arise as no territory belonging to India was ceded to Sri Lanka. It contended that the islet was a matter of dispute between British India and Ceylon (now Sri Lanka) and there was no agreed boundary, a matter of which was settled through 1974 and 1976 agreements. In December 2022, the Centre, pointed out in its reply in the Rajya Sabha that Katchatheevu “lies on the Sri Lankan side of the India-Sri Lanka International Maritime Boundary Line.” It added that the matter was sub-judice in the Supreme Court.

## HOW IS THE SC TACKLING GENDER STEREOTYPING?

### The story so far:

Discarding “archaic ideas with patriarchal overtones”, particularly while describing women and their issues, the Supreme Court of India has released a set of new words and phrases to be used by both lawyers and judges in court. In his foreword, Chief Justice of India D.Y. Chandrachud writes that “The Handbook on Combating Gender Stereotypes’ aims to assist the legal community in “identifying, understanding and combating stereotypes about women. It contains a glossary of gender-unjust terms and suggests alternative words or phrases which may be used while drafting pleadings as well as orders and judgments.”

### What are some of the changes?

To avoid the use of harmful gender stereotypes in judicial decision-making and writing, the handbook identifies language that promotes such stereotypes, and offers new words. For example, under the guidelines, it will be incorrect to say “adulteress”; instead, the following words have to be used: “Woman who has engaged in sexual relations outside of marriage.” It is no longer proper to prefix “chaste” or “obedient” before woman and wife; plain “woman” and “wife” will do.

### How should sexual violence be looked at?

The handbook says an individual who has been affected by sexual violence may identify as either a “survivor” or “victim”.

Stressing on consent, the guidelines point out that the clothing or attire of a woman must be independent of questions of sexual relations. “A man who touches a woman without her consent must not be permitted to take the defence that the woman invited his touch by dressing in a particular way.” There are a host of dos and don’ts on how to handle issues of rape and assault. The Court shatters the stereotype that women who are sexually assaulted or raped file a complaint about the injustice immediately and if they complain after a time, they are lying. “It takes courage and strength to report a sexual offence because of the stigma attached to it,” the handbook says, adding, “women may therefore register a complaint after a lapse of some time, when she thinks she is able to.”





### **Why are stereotypes harmful?**

On a micro-level, the handbook states that stereotypes lead to exclusion and discrimination at the workplace, educational institutions and in public places. It cites the example of a stereotype that individuals from oppressed castes are not as accomplished in school or university in comparison to individuals from oppressor castes. This, it says, may cause members of oppressed castes to face additional mental pressure when writing an examination. “A student from an oppressed caste who is aware of the stereotype about their community will not only have to worry about doing well in the examination, but also be burdened with the additional worry that if they perform badly in the examination, it will reinforce the stereotype concerning their community. This added pressure may have an adverse impact on their performance in the examination.” Compare this to what the Minister of State for Education Subhas Sarkar informed Parliament recently. He provided data that over 25,000 reserved category students from Scheduled Castes, Scheduled Tribes, Other Backward Classes and other minority groups dropped out of central universities and the Indian Institutes of Technology (IITs) over the last five years. “The dropout in undergraduate programmes is attributed to withdrawal due to wrong choices filled, poor performances and personal and medical reasons,” he said.

As for women, the OHCHR (Office of the High Commissioner for Human Rights) points out that labels whether overtly hostile (such as “women are irrational”) or seemingly benign (“women are nurturing”), perpetuate inequalities. For example, it says, the traditional view of women as care givers means that child care responsibilities often fall exclusively on women. The Supreme Court has taken care of it with these directives: “A person’s gender does not determine or influence their capacity for rational thought,” and “People of all genders are equally suited to the task of caring for others.”

### **Has the Supreme Court taken up stereotypes in its verdicts?**

The Supreme Court has highlighted verdicts that have rejected stereotypes and which can be utilised by judges to shun gender stereotypes. For instance, in Joseph Shine versus Union of India, a Constitution Bench struck down the offence of “adultery” under Section 497 of the Indian Penal Code. Observing that the law on adultery was but a codified rule of patriarchy, it said, “Society ascribes impossible virtues to a woman and confines her to a narrow sphere of behaviour by an expectation of conformity.” In State of Jharkhand versus Shailendra Kumar Rai, the Court reiterated its categorical ban on the “two finger test” and said it was irrelevant to determination of rape and that it violated the dignity of rape survivors or victims. In State of Punjab versus Gurmit Singh, it held that a testimony of a rape survivor or victim is “inherently credible.” The delay in lodging an FIR can be due to a variety of reasons, it said.

### **Will it have an impact on the ground?**

For Uma Mahadevan-Dasgupta, who is in the IAS, it’s a great first step. The table in the handbook, which lays down the stereotype and the reality in two columns side by side, is an important takeaway for her, because it removes so many qualifiers that judge women. “The handbook, by the highest court of the land, is going to have an impact. However slow, it will lead to a mindset change, because language is a powerful tool.”



## SC TO CONSTITUTE A NEW BENCH TO HEAR CAUVERY WATER ISSUE

Chief Justice of India D.Y. Chandrachud on Monday assured Tamil Nadu that he would constitute a Bench to hear the State's plea for the release of its allotment of Cauvery river water for August. Lawyers of the State told The Hindu that the Bench had not been formed yet, and it might be done on Tuesday.

Tamil Nadu has moved the Supreme Court seeking a direction to Karnataka to release 24,000 cusecs of Cauvery water forthwith from its reservoirs at Billigundulu for the remaining period of the month, starting from August 14.

The State said the release of water was a dire necessity to meet the pressing demands of the standing crops.

Tamil Nadu has urged the court to direct Karnataka to ensure the stipulated releases for September (36.76 tmcft) under the Cauvery Tribunal award as modified by the Supreme Court in 2018.

The State said Karnataka should make good the shortfall of 28.849 tmcft of water during the current irrigation year for the period between June 1 to July 31.

Tamil Nadu asked the court to direct the Cauvery Water Management Authority to ensure that the directions issued to Karnataka to release water were "fully implemented and the stipulated monthly releases during the remaining period of the current water year are fully given effect to by the State of Karnataka". It said that Karnataka had to ensure to make good the deficit in water supply from Billigundulu as on August 9.

This was 37.971 tmcft in addition to the demand of around 24,000 cusecs, in the month of August.

A direction was given to Karnataka on August 10 to release from its reservoirs 15,000 cusecs at Billigundulu on August 11 for 15 days.

"Unfortunately, even this quantum of water was arbitrarily reduced to 10,000 cusecs by the CWMA in its 22nd meeting held on August 11 at the instance of Karnataka. Regretfully, even this amount of 10,000 cusecs to be ensured at Billigundulu by releasing such quantum of water from the KRS and Kabini reservoirs has not been complied with by Karnataka," the Tamil Nadu application has said.

## SC CRITICISES GUJARAT HC FOR ITS 'COUNTERBLAST' IN ABORTION PETITION BY RAPE SURVIVOR

The Supreme Court on Monday expressed strong displeasure at the Gujarat High Court's "counterblast" to its criticism about the manner in which a 25-year-old rape survivor's plea for abortion was handled by the High Court. The top court had held a special session on Saturday, August 19, on an appeal filed by the woman, seeking an urgent hearing of her plea to medically terminate the pregnancy, which was already nearing 28 weeks.

A Special Bench of Justices B.V. Nagarathna and Ujjal Bhuyan, which heard the case on August 19, immediately ordered the woman to be medically examined and scheduled the case on Monday for orders.



The Saturday hearing had seen the Bench criticise the Gujarat High Court for adjourning the case for 12 whole days, defeating the woman's race against time to get an abortion, and eventually dismiss it.

On Monday, Justices Nagarathna and Bhuyan were informed by lawyers that the Gujarat High Court had convened a suo motu hearing in the same case, shortly after the Supreme Court hearing ended on Saturday.

The top court Bench was informed that the High Court had passed an order to "clarify" that the adjournment was given to obtain her view on whether she was willing to give her child into State custody.

This upset the Bench even more. Justice Bhuyan said an unjust condition could not be perpetuated on a rape survivor. "How can you force the rape survivor to undergo pregnancy?" Justice Bhuyan asked.

Justice Nagarathna questioned the very need for the High Court to convene a suo motu hearing in a case it had already dismissed, that too, shortly after the Supreme Court had heard it in appeal. "We do not appreciate the counterblast by the High Court to the order of the Supreme Court. What is happening in the High Court of Gujarat?" Justice Nagarathna asked in open court. The Bench said it was not targeting a particular judge but questioning the procedure followed in such a time-sensitive case.

#### **Plea allowed**

The top court, however, refrained from recording anything adverse in its order against the High Court while allowing the plea for medical termination of the pregnancy.

The Bench noted that a woman has a sacrosanct right to bodily integrity. It said pregnancy caused by a sexual assault was injurious to the mental health of the survivor.

### **CRIMINAL LAW BILLS RENAMING IS NEEDLESS MEDDLING**

Three new Bills were tabled in Parliament recently. This article is not about the content of these Bills (the controversies on that will play out) but their names: the Indian Penal Code is now replaced by Bharatiya Nyaya Sanhita, the Code of Criminal Procedure by Bharatiya Nagarik Suraksha Sanhita and the Indian Evidence Act by the Bharatiya Sakshya Bill. That these are names unfamiliar to, and unpronounceable by, more than half the country's citizens and an overwhelming majority of its legal practitioners, makes these Bills fail the first test of acceptability. Moreover, Article 348 of the Constitution states that the authoritative texts of all Acts passed by Parliament or State legislatures shall be in the English Language. The body of these new Bills is in the English language, but the title of the Bills being in Hindi goes against the embargo placed by the Article.

#### **Language and the legal regime**

The issue of language was hotly contested and debated in the Constituent Assembly and led to the adoption of various provisions in the Constitution as well as the Official Languages Act. The legal regime in place provides that English shall remain an official language until resolutions for the discontinuance of English as an official language are adopted by State Legislatures and by Parliament. That is a dim prospect when we aim to be a strong player in a globalised world.



In a linguistically diverse country where language has been the flashpoint for several protests and people's movements, the emotions and sentiments that people attach to their language must be respected. The fact that India was divided into States based on linguistic differences is sufficient to demonstrate how deeply intertwined language is with the identity of States and their residents. Is it necessary to be reminded of the protests that raged, taking lives with it, through the States of Maharashtra, Tamil Nadu, West Bengal, Punjab, and Karnataka when Hindi was sought to be made the sole official language in the 1960s? The issue continues to be highly emotive. Language is an integral part of culture, and the attempt to use Hindi in the names of the Bills introduced by the Union Government will be seen as the imposition of the culture of the linguistic majority on linguistic minorities.

### **This is majoritarianism**

The anxiety of non-Hindi speakers finds its roots in events that are taking place around us now. Statements by persons in positions of power that Hindi must be accepted as the 'national language' soon, and issuance of Hindi-only forms in public undertakings such as the Indian Railways and banks have been flagged repeatedly. The original draft of the National Education Policy 2020 contained provisions which drew protests, being seen as an attempt to "impose Hindi". Over the past few years, the Union Home Minister has made several statements linking the language of Hindi to nationhood and the idea of India. He stated in 2019 that "only Hindi can work to unite the country". He makes a similar statement every Hindi Diwas, and that can only keep the issue burning.

The perception is that there is an attempt to privilege India's most spoken regional language over other regional languages and to place it above the other languages as essential to a person's identity as an Indian. The issue is not just about language but about culture, inclusivity, diversity, and respect. The only argument to privilege Hindi over other languages of India such as Bengali, Tamil, Telugu, Kannada and Odia is that Hindi is spoken by more people. To say "we are more in number, so other communities must assimilate into our culture and speak our language" is simply majoritarianism and is antithetical to the Constitution. The legal position of the country is that English shall continue to remain an official language until the non-Hindi speaking States desire so. The prerogative to have Hindi as the sole official language, therefore, does not lie with those in the Hindi heartland, but with those on its margins. The Constitutional position is also that the text of laws introduced in Parliament shall be in English. The naming of these Bills, apart from stoking an old fire, is plainly unconstitutional.

### **Change the names**

The plain fact also is that English is the language of the law and of the courts, especially the superior courts, viz., the High Courts and Supreme Court of India. Judges are transferred across the country. Statutes are read in English. We follow the common law system giving importance to precedents, and these are written and stored in English. The law requires utmost precision and clarity in pleadings, arguments and judgments, and Indian lawyers and judges have risen magnificently to the occasion with English. Are we now to subject them to colloquial terms or high flown Hindi names familiar only to pandits in Sanskritised Hindi? This is needless meddling and nothing short of provocation. The first task of the Parliamentary Committee to which the Bill has been referred must be to change the names. And is it that these Bills are referred to the Standing Committee for Home Affairs, and not to the Committee for Law and Justice?



## DECONSTRUCTING HATE NARRATIVES: ANALYSING THEIR COMPOSITION AND IMPACT

The detrimental influence of negative media content, stresses the urgency of promoting positive narratives for societal betterment; it also advocates for a shift towards constructive storytelling that fosters unity and understanding

Art binds people to each other but sometimes when prejudice starts informing the craft, cinema becomes a tool to shape hostile propaganda against a community. Some are blunt, others are sharp. In the last couple of weeks, we watched two varieties in the form of *The Kashmir Files: Unreported* and the much-anticipated sequel to Sunny Deol's *Gadar*. The former is a docu-series by Vivek Agnihotri that follows up on his contentious *The Kashmir Files* which argues that the exodus of Kashmiri Pandits was a genocide committed by the Kashmiri Muslims who wanted to usurp the land and women of the minorities. With little tangible growth in conversation and tonality, it is more like Mr. Agnihotri patting his back by putting out 'his research material' for the moving but a manipulative feature film that stirred the box office after the pandemic.

The Anil Sharma film has one filter as he once again indulges in Pakistan bashing ostensibly to send Indian Muslims a message. Like the original, the sequel is also creating a jingoistic atmosphere in theatres. The sequel feels more puerile than provocative because in the last two decades the social media space and newscape have become a lot shriller and dog whistle politics has become an everyday reality.

By chance or design, the narrative feels manufactured to build on the goodwill of the original to perhaps create an atmosphere ahead of the Lok Sabha polls. Sunny Deol is a BJP Member of Parliament and has a strong influence on the farmer community who have protested against the policies of the ruling party. It goes without saying that it will be in the interest of the party if farmers vote as Hindus. Both films generate a fear of sexual aggression, an important element in propaganda films, to put their point across. One of the potent and provocative tactics to create hate for a group of people is by forming a narrative that the 'other is after our women.' It has been effectively used in creating a social narrative against African Americans and Jews at different points of time in cinematic history. Of late, it is finding ground in Hindi cinema. It is pretty straightforward in *The Kashmir Files* and *The Kerala Story* — which deals with the issue of influencing young girls to convert to Islam and using them as fodder in terror activities, but also finds reflection in a little more nuanced and better-crafted films like *Padmavat* where the Muslim aggressor is creatively demonised. In these films, there is not even a token good Muslim and it is not just the writing even the camera's gaze and light design generate a barbaric and atavistic image of Muslim characters.

It reminds of D.W. Griffith's racist drama *The Birth of a Nation* where some African Americans are shown to be worthy of being lynched for they keep eyeing white women. Similarly, German films *The Rothschilds*, *Jew Suss*, and *The Eternal Jew* painted Jews as immoral and despicable parasites who needed to be wiped out. They helped in spurring an anti-Semitic sentiment in Germany in the 1940s.

### **One sided and leftist narratives**

In the *Gadar* series, the idea is inverted. The film blurs the line between Hindu and Hindustan. Here an impression is formed that we can demolish the opponent and win over their women with love and compassion. In the original, Tara Singh, a truck driver, saves Sakina, a Muslim girl who hails from a privileged background and gets left behind when her family migrates to Pakistan after



Partition, from a Hindu mob and eventually marries her but only after she gives her hand. When her thankless father takes her away to Pakistan, Tara brings her back after pummelling the opposition. In the sequel, Tara's son travels to the neighbourhood in search of his father but along the way wins the heart of Muskaan, a Pakistani girl whose father seems to be a sympathiser of the Baloch movement. In the subcontinent, women are still seen as the custodian of the honour of the family and community and it is one of the reasons that a section of Muslims is wary of the underlying politics of the Gadar series.

It reminds them of a real-life imagery where efforts to free Muslim women of hijab, polygamous men, and instant Triple Talaq and bulldozing of their homes and lynching of their men form a common disturbing montage.

The one-sided narratives, built on half-truths and the pain of real-life victims of terror, seem to have the backing of the dominant political ideology. It calls it course correction from the leftist narratives of the 1960s and 1970s that allegedly appeased one community by presenting a romanticised secular picture. For them, there is no space for Ganga Jamuni tehzeeb (syncretic culture) in this latest clash of civilisations and seek to inject the audience with rage and revenge.

Curiously, in the last year, Prime Minister Narendra Modi has mentioned only two films in his speeches: The Kashmir Files and the other is The Kerala Story. He used them to whip the opposition and suggested more such films should be made.

Bestowing the Nargis Dutt Award for National Integration to The Kashmir Files in the 69th National Film Awards announced on Thursday underlines how the present dispensation sees the moral character of the film. In a way, the award carries forward the narrative that reading down of Article 370 is helping in better integration of Kashmir with India. The fact that management of Delite Cinema, situated at the cusp of Old and New Delhi, had to shift The Kerala Story from its boutique Diamond theatre with a capacity of just 250 seats to its main theatre that could accommodate at least four times more audience within in a week of its release tells us that deeply prejudiced narratives are also finding traction on the ground. So much so that it is threatening to create a mass that can bite the hand that is feeding it for it detests any kind of tempering or dilution of the venom. It was apparent when the makers and writer of Adipurush were aggressively slammed on social media and taken to court despite the fact that they seemed very much part of the course correction team in the run-up to the release.

Similarly, the purveyors of hate, which includes some self-styled film critics as well, restrained their support to 72 Hoorain and Ajmer 92 when they discovered that the films are not at all rabid as the title and synopsis or for that matter their imagination suggested. They just came out of the can for there is a demand for such titles. We find in Gadar-2, Sakeena continues to follow her religion after her marriage with Tara. It talks about how locals who support the sons-in-law of Pakistan could find sanctuary in Balochistan. It refrains from generalisation as it shows General Hamid Iqbal who carries a personal grudge against Tara Singh as a cigar-smoking monster who loves his wine to showcase that he is not a true Muslim. Even the Pakistani soldiers lose respect for Iqbal in the climax.

The Kashmir Files: Unreported is comparatively less divisive in presenting its point of view than the feature film. It talks of what pushed the Muslim Kashmiri youth towards extremism. At one point, it says a handful of people were responsible for the situation. It could not find even a single talking head to put across a Kashmiri Muslim's perspective of the situation.



The testimonies of Kashmiri Pandits are indeed heart-wrenching but the film only indulges in a blame game. Perhaps, that's why Zee5, the platform where the docu-series is streaming, doesn't take responsibility for what is said across seven episodes. The platform has also realised that it can't give unqualified support to a one-sided narrative of a complex problem.

Meanwhile, there is another film, *OMG-2*, that hit the theatres the same week that gives hope. It proves that the audience is not a monolith and that art still binds people. Director Amit Rai builds an entertaining yet educative conversation on sex education. There is a scene in the film where Zaheer, a teenager tells a secret of his and his friend to the friend's father, a Shiv bhakt, and requests him to keep it a secret. When the father says yes, Zaheer asks, 'Mahakaal Ki kasam?'

But this time, the system, represented by the Censor Board of Film Certification that found message of peace in all the violence of *Gadar-2* chose to put the film, that talks to teenagers and their parents about the importance of sex education in schools, in the adults category. A cursory glance at theatres reveals that teenagers are lining up at ticket windows and managers, who have faced a long draught, are preferring to look the other way.

## THE FAILURE OF HOPE

Hope is what humans use to define the future: the promise of a better tomorrow that makes life bearable even when the present is infused with suffering. Assaults on the possibility of hope are therefore the unkindest of cuts. The recent incident in Nanguneri town in Tamil Nadu's Tirunelveli district, where a Dalit teenager and his sister were brutally hacked by schoolmates belonging to an intermediate dominant caste is demonstrative of the failure of hope for a whole generation of a community living on the margins. It is the latest among many conflagrations that erupt periodically in the deep south of the State, fuelled by chronic resentment among communities, in turn seeded by the historical oppression of Dalits. In this case, teenagers, all caste Hindus and schoolmates of the boy and his sister, barged into the house of the siblings in a Dalit locality and attacked them, leaving them lying in a pool of blood. The attack was said to be revenge for the Dalit boy daring to give a complaint against his classmates for relentlessly harassing him as being 'lower-caste'. The school then issued a warning to those whom he had complained against. Angered by this, three of the boys from the intermediate community attacked the siblings on the night of August 9. While the boy had to have a complex hand surgery, his sister continues to be hospitalised. The attackers and their associates have been arrested and lodged in the government observation home.

It is the unceasing nature of caste hatred, how caste pride is being infused in generation after generation that fells the hope of a better, caste-free society. The use of caste threads to distinguish Dalit children from the other castes in schools, the unique use of caste colours in a primordial act of marking territory in the villages in the south, the frequent violent clashes, and the recruitment of youngsters by local political/caste groups, all speak to the deep-rooted malaise in the region. Clearly, the much-touted Dravidian Model inspired by Periyar, to overcome caste hegemony and facilitate inclusion of all citizens in development, has not been uniform in implementation. So far, attempts to handle caste conflict have only been band-aids to violent outbursts, and a consistent effort to address the root of the problem has been lacking. The government has now established a one-man commission headed by retired judge K. Chandru to suggest steps to stamp out caste differences among students. It would be a pity if Nanguneri does not serve as a wake-up call; a catalyst for destroying caste hierarchies, restoring peace and equality, and, hope.



## DEEP IN DISARRAY

That the Legislative Assembly of Manipur was not convened on Monday, as recommended by the Council of Ministers, is an indication of how grave the crisis gripping the State is. Governor Anusuiya Uikey did not issue the notification summoning the House, even though the Cabinet had advised her on August 4 itself to call for the session on August 21. The delay on the part of Raj Bhavan in issuing the notification is presumably due to the political and law and order situation in the State. Legislators of Kuki ethnicity, across party affiliations, have expressed their inability to attend the Assembly session due to the prevailing atmosphere, as violence continues in parts of the State. It is unlikely that the Governor is unaware of the constitutional position that she is bound by the advice of the government with regard to summoning the Assembly. A Constitution Bench had made this clear in *Nabam Rebia* (2016). Whether the Governor is guided by her own wisdom or the Union government's assessment of the situation, it is difficult to justify the failure to hold the Assembly session as sought by the Council of Ministers. The last session of the Manipur Assembly was held in March, and the House has to meet again before the expiry of six months from its previous sitting. The period ends on September 2.

There have been both political and civil society demands for the Assembly to meet and discuss the violence that broke out early in May over a High Court order that directed the Manipur government to respond to a communication from the Union Ministry for Tribal Affairs on recommending the grant of Scheduled Tribe status to the Meitei community. The delay on the Governor's part in notifying the session casts a shadow on the legitimacy and authority of the government headed by Chief Minister N. Biren Singh. The Governor would be well-advised to act on the Cabinet's recommendation. On another issue, there appears to be an unusual delay in the appointment of Justice Siddharth Mridul, a judge of the Delhi High Court, as the Manipur High Court's Chief Justice. The court has been under an Acting Chief Justice for several months now. Reports suggest that the Centre has forwarded the Collegium's recommendation to the State government for its consent. The question arises whether any constitutional functionary in the State is holding back the process. The chain of events set off by an order passed by the Acting Chief Justice has already witnessed much violence and disorder, and the State should not lapse into further constitutional disarray.

## DISPUTE OVER TUTOR'S REMARK IS MUCH ADO ABOUT NOTHING

A week ago, Unacademy, an online education platform, fired an instructor, Karan Sangwan, after a video of him talking to students about voting for educated candidates went viral. Unacademy said that Mr. Sangwan had breached the "code of conduct," while the instructor argued on his YouTube channel that his statement was "not political in nature" and that he had never asked students "to vote for educated candidates". He also accused the company of buckling under pressure. "There is a pressure which gets built and you burst under its load. You could not deal with the pressure," Mr. Sangwan said.

The controversy has snowballed since Mr. Sangwan's termination. Delhi Chief Minister Arvind Kejriwal wondered why asking people to vote for an educated person was a crime. "If someone is illiterate, personally I respect them. But public representatives cannot be illiterate," he said. Senior Congress leader Pawan Khera asked why the teacher's comments were taken personally. "Nobody from the Congress felt like he was talking about us," he said. Chatter on the subject continues on social media.





. Data show that 72% of the current MPs completed graduation. Among the rest, about 23.5% did not go to college; they at least completed fifth grade in school. Information about the educational qualifications of 4% of the MPs is not available. This means that only less than 0.5% are recorded as illiterate or just literate in the current Lok Sabha.

The trend holds true among most State MLAs too. That is, a very small share of MLAs are illiterates or just literate. However, there were significant differences among the States, though graduates dominated most Assemblies. In all the major States, except Gujarat, a majority of the current MLAs are graduates.

Himachal Pradesh has the highest share of MLAs who are graduates and above (76.5%) followed by Uttar Pradesh (75.2%) and Chhattisgarh (68.9%). On the other hand, Gujarat had the lowest share of graduates (45.6%) followed by Maharashtra (54.9%) and Punjab (57.3%). In Gujarat, 47.3% of the current MLAs did not go to college but had at least completed fifth grade in school.

Data about educational qualifications of Lok Sabha MPs is available from 2004, and the latest trend holds true for all general elections since. However, among MLAs, some States showed distinct trends over time.

The share of graduate MLAs in Chhattisgarh surged from 49% in 2008 to 69% in 2018. Similarly, the share of graduate MLAs in Uttar Pradesh improved from 61% in 2007 to 75% in 2022. Notably, the share of MLAs who are graduates is on a rising trend across all the States. It is important to note that the education data of MLAs was not publicly available in some years in select States (in 2016 in Tamil Nadu, in the 2006 Assembly elections in West Bengal, and in 2005 in Bihar).

With a majority of MPs and MLAs being graduates and the share of graduate MLAs on an increasing trend, the controversy over the remark is not backed by data, as voters' choice favour the educated already. More importantly, the share of illiterates is negligible among MPs and MLAs.

## OBSERVING CELEBRITIES IN PARLIAMENT

The Election Commission has conferred the status of "national icon" on former Indian cricketer Sachin Tendulkar. For the next three years, he is bound by a contract to spread awareness about the need for greater voter participation in the electoral process.

Though the intention is laudable, ironically it brings back memories of Tendulkar's lacklustre stint in the Rajya Sabha. Parliament rules stipulate that members' leave applications are read out during a session and the House decides whether or not to grant permission. Just as the House was about to sing its customary "aye", Samajwadi Party MP Naresh Agarwal rose unexpectedly to lob a bouncer at the absentee cricketer. "He hardly comes to the House. Why not give him permanent leave?" he joked and the entire House broke into laughter. Leave was granted and Tendulkar went on to complete his unremarkable term without "permanent leave".

The 2014 Lok Sabha, in particular, was packed with actors. Hema Malini sat on the Treasury benches among a row of women MPs.

In the Rajya Sabha, Jaya Bachchan has represented the film industry for long. But unlike many of her colleagues from tinsel town, she goes to Parliament regularly and participates in all the debates. She is also the resident Santa Claus. In her capacious brown bag, she carries chocolates and mints and distributes them regularly to members of all parties.



## A STRONG CASE TO RESTORE SECTION 8(4) OF THE RP ACT

Rahul Gandhi of the Congress party was disqualified on being convicted and sentenced to two years imprisonment in a 2019 defamation case. The disqualification was instant because of the Supreme Court of India's judgment in *Lily Thomas vs Union of India* (2013). Through this judgment, the Court invalidated Section 8(4) of the Representation of People Act 1951, which had allowed a three-month period within which to appeal. Disqualification was not to take effect during this period; when the appeal is admitted, disqualification would depend on the final outcome of the appeal.

Thus, under the legal provision cited, there was no instant disqualification of sitting members of the legislature. But after the Court struck down this provision of the Representation of People Act 1951, according to the opinion of some experts, a sitting legislator is disqualified the moment the court orders conviction and sentence under Section 8(3) of the Representation of People Act. The top court said that Article 102(1) does not create any difference between the sitting member and a candidate so far as disqualification is concerned. It held that Parliament has no power to grant exemption to sitting members for three months and thus struck down Section 8(4) as ultra vires the Constitution.

### **A case with no sound legal basis**

So now, only Section 8(3) remains in the Act which deals with disqualification of persons convicted and sentenced to two years imprisonment. This section simply says that a person who is convicted of an offence and sentenced to imprisonment for not less than two years shall be disqualified from the date of conviction. It does not say that such a person stands disqualified from the date of conviction. So, there is no ground indeed to conclude that the disqualification takes place the moment the court pronounces a person guilty. The only condition is that such a person shall be disqualified from the date of conviction. So, it appears that the act of the instant disqualification of Mr. Gandhi did not have a sound legal basis; particularly so when we consider the words "He shall be disqualified", which could only mean that some authority has to officially declare him disqualified.

The opinion of this writer, which was expressed in few articles, is that the authority that/who can declare a sitting legislator disqualified could be the President of India exercising this power under Article 103. Although the Supreme Court did not accept this proposition in *Lily Thomas, in Consumer Education & Research ... vs Union Of India & Ors* (2009), a three-judge Bench held that a declaration by the President, under Article 103, that the sitting member has incurred disqualification is necessary.

Thus, the scheme of Section 8(3) seems to be that when a sitting member is convicted and sentenced to imprisonment for two years or more, he shall be disqualified with effect from the date of conviction. Further, it is the President who shall disqualify him under Article 103. The Secretariat of the House to which the member belongs has no recognisable authority to declare that a member stands disqualified as soon as he is convicted by a court of law.

### **Disqualification and sentence quantum**

A question of legal importance that arose in the context of the disqualification of Mr. Gandhi was whether the stay of only sentence can lift the disqualification or whether stay of conviction is necessary. In the 1980s and 1990s, some of the High Courts (Allahabad High Court in Sachindra



Nath Tripathi vs Doodhnath, 1987 and the Himachal High Court in Vikram Anand vs Rakesh Singha, 1994) had held the view that disqualification remains intact on staying the sentence. But the Madras High Court took a different view in the Jayalithaa case (2001). It held that “the moment the sentence is suspended[,] conviction should be deemed to have been suspended or otherwise the framers of the code would have taken care to provide for stay of conviction or suspension of conviction also”. However, in Rahul Gandhi’s case, though the Supreme Court stayed the conviction, it did not express any opinion on the question of whether a stay of conviction is also necessary or on suspending the disqualification.

It must be remembered that disqualification arises only when the sentence is imprisonment for two or more years. As the Court observed in its recent order in Rahul Gandhi’s case, if the period of imprisonment was less by one day the disqualification would not have occurred. It would mean that disqualification is directly relatable to the quantum of sentence and not conviction. But this is a point the lawmakers and the judiciary will have to deal with.

The judgment in Lily Thomas can play havoc with the careers of sitting legislators in the country. Instant disqualification on conviction and sentence will upset their entire legislative career without giving them breathing space because the courts in general have a very dilatory system in dealing with appeals, revisions and such. But the case of the Agra court staying the conviction of Bharatiya Janata Party (BJP) MP Ram Shankar Katheria within 24 hours of conviction in a criminal case, thus saving his House membership is one of the rarest exceptions.

It is heartening that a court like the Agra session court exists in our country. But the issue of instant disqualification needs to be addressed urgently as it may affect the career of legislators. The Supreme Court struck down Section 8(4) on the ground that Parliament has no power to provide for a special dispensation for convicted legislators because Article 102(1) does not permit such differentiation between them and the candidates. But so far as differentiation goes, the Constitution in fact permits it under Article 103 which provides that in the case of sitting legislators, the question of disqualification under Article 102(1) will be decided by the President. Perhaps a suitable amendment can be made in Article 102 to enable Parliament to restore the invalidated Section 8(4).

#### **No qualitative change**

In fact, the judgment in Lily Thomas has not resulted in any perceptible qualitative change in the criminal proclivity of politicians. Politicians belonging to the powerful ruling dispensation at a particular time may be able to get a conviction stayed within a few hours, thus saving themselves from instant disqualification. But others will have to wait like Mr. Gandhi had to for four months and for the intervention of the Supreme Court just to get a stay on conviction in a defamation case which is non-cognisable and bailable. This and other cases show that Section 8(4) needs to be restored and protected constitutionally in order to protect the careers of India’s legislators from abrupt convulsions caused by court orders which are given, in the words of the Supreme Court, “without any application of mind”.

#### **EXPRESS VIEW ON KASHMIR DRUG CRISIS: CONNECT THE DOTS**

An investigation by this newspaper has revealed that a devastating epidemic of drug addiction, mostly affecting young men, is sweeping across Kashmir, wreaking havoc on individuals and families, stretching the state’s public health system and posing a new challenge to the security forces. The figures are telling: Last year, one patient walked into the Valley’s largest de-addiction



centre at SMHS Hospital Srinagar every 12 minutes. Police records show that the seizure of heroin — the most consumed drug in Kashmir — has more than doubled in 2022 compared to 2019. Sixty per cent more people were arrested for drug-related crimes last year compared to 2019. Breaking networks of drug cartels is imperative. However, punitive measures alone cannot uproot this problem. Substance abuse, universally, has been recognised as a manifestation of distortions in sociocultural, economic and political systems. The J&K administration would do well to take cues offered by its own study in collaboration with the Institute of Mental Health and Neuro Sciences Kashmir — 25 per cent of the drug users are unemployed, 15 per cent are graduates, 14 per cent have studied up to the intermediate level and 33 per cent have matric level education. A growing corpus of work also shows that the myriad disruptions and the absence of recreational avenues in conflict zones leave psychological scars on people, especially the youth. In other words, a key part of the preventive measures should involve joining the dots — between unemployment, financial difficulties and an ecosystem rife with political uncertainty on one hand and the addictive behaviour of young people on the other.

Narcotic smugglers often find their way into Kashmir via Punjab, a state where the scourge of drugs has been extracting a high social cost for many years. With farming becoming less profitable in Punjab, the absence of initiatives and support structures to help the youth equip themselves with skills and opportunities has worsened the situation. Last year, a study by the Chandigarh-based Post Graduate Institute of Medical Education and Research (PGIMER) revealed that one in seven persons in Punjab is dependent on addictive substances. The J&K administration must heed the lessons from the crisis in the once-prosperous state. It must invest in enhancing the economic — and recreational — opportunities for youngsters. It would also do well to engage civil society players in its endeavours. J&K could take a leaf out of the PGIMER study's recommendations for Punjab — build the capacity of teachers, health inspectors and block-level officials for prevention activities and rope in religious leaders to advocate a “tandrust atey nasha mukt Punjab (healthy and drug-free state)”.

Investigations have revealed that the drug cartels are part of a narco-terror network with links to Pakistan and West Asia. This adds a new dimension to Kashmir's security challenge. The crisis is also a governance test for J&K, especially at a time when it has no elected assembly. If the people and civil society have to play a significant role in thwarting the designs of the drug cartels, they should be empowered through vibrant political processes. The region needs a healing touch. This should be undertaken at multiple levels — public health, economy and politics.

## 5 THINGS YOU DID NOT KNOW ABOUT CHANDRAYAAN, OTHER MOON MISSIONS

The Chandrayaan-3 mission has been generating a lot of discussion around India's space programme, and Moon missions in general. Here are a few things you may not be aware of.

### **Kalam ensured Chandrayaan-1 left imprint on Moon**

Chandrayaan-1, India's first mission to the Moon in 2008, was just an Orbiter. When the spacecraft was being assembled, President A P J Abdul Kalam visited the Indian Space Research Organisation (ISRO) office. According to an account by former ISRO chairman G Madhavan Nair, Kalam asked scientists what evidence Chandrayaan-1 would have to show it had been to the Moon.

When the scientists said it would have pictures of the lunar surface, Kalam apparently shook his head and said that would not be enough. He then suggested that the spacecraft carry an instrument that could be made to fall on the Moon's surface.



ISRO heeded Kalam's advice and made design changes to accommodate a new instrument. This Moon Impact Probe hit the lunar surface, and became the first Indian object on the Moon.

#### **Chandrayaan-2 lander was to come from Russia**

Russia's Luna-25 spacecraft crashed on the lunar surface on Saturday. An earlier version of the same lander was supposed to go on India's Chandrayaan-2 spacecraft, but did not.

The Chandrayaan-2 mission, which had a lander and a rover, was originally supposed to go in the 2011-12 time frame. At that time, India had not developed its own lander and rover. The original Chandrayaan-2 spacecraft was supposed to be a joint mission with Russia. India was supposed to provide the rocket and Orbiter, while the lander and rover would have come from Russia.

The kind of lander and rover that Russia was developing for Chandrayaan-2, however, showed problems on a different mission, forcing Russia's space agency Roscosmos to make design changes. The new design, however, was larger and could not be accommodated on the Indian rocket. Russia eventually pulled out of the collaboration, and ISRO went in for indigenous development of the lander and rover. That took time, and Chandrayaan-2 could fly only in 2019.

#### **India's next Moon mission is not called Chandrayaan**

Unlike some countries that have a whole series of lunar missions planned, India has not yet announced follow-up missions to Chandrayaan-3. While there would obviously be a Chandrayaan-4, 5, 6 or more, India will, before those, send another Moon mission in collaboration with Japan. It is called LUPEX. The mission is likely to be launched in the 2024-25 timeframe.

#### **Europe withdrew from Russia's Luna-25 due to Ukraine war**

The European Space Agency was an important partner for Roscosmos, not just on Luna-25 but also on the Luna-26 and Luna-27 missions, planned for later this decade. The ESA was putting a navigation camera and an optical navigation system on Luna-25. More robotic equipment was planned to be integrated into Luna-26 and Luna-27. Similar cooperation was going on for a Russian Mars mission as well.

However, all that was suspended by the European agency in April last year, after Russian forces invaded Ukraine. The science and technology objectives that Europe planned to fulfill through these missions will now be fulfilled through collaboration with NASA.

#### **Japan, Israel landing bids were by private companies**

Over the last decade, five countries have attempted to land on the Moon — China, Israel, India, Japan, and Russia. Only China has succeeded so far. The Moon missions from Israel and Japan, Beresheet and Hakuto-R respectively, were sent by private companies. Till date, these remain the only attempts by private space agencies to land on the Moon.

Later this month, Japan's space agency JAXA is readying to send its first Moon landing mission. It is called SLIM, or Smart Lander for Investigating Moon.

### **WHY DID CHANDRAYAAN-3 LAND ON THE NEAR SIDE OF THE MOON?**

The controlled descent of the Vikram lander of Chandrayaan-3 made it one of the closest approaches of a lunar mission to the moon's South Pole. However like most of the lunar-landing



missions before, Vikram too landed on the near side, making the Chinese Chang'e 4 mission the only one to have landed on the far side.

#### **What are the moon's 'near' and 'far sides' and is there a 'dark' side?**

The near side refers to the portion of the moon — about 60% — that is visible to us. It is always the same side that is visible from Earth because the moon takes the same time to rotate about its axis as it does to circle around the Earth. However this doesn't imply that the half the moon is in perpetual darkness.

The 'new moon' or when the moon is invisible from Earth is the time when the other 'far side' of the moon is bathed in sunlight and continues to receive light for nearly a fortnight. The 'dark side' is thus dark only in the sense that it was mysterious and its various topographical features hidden until the Soviet spacecraft Luna 3 in 1959 photographed it and the Soviet Academy of Sciences released an atlas of these images. Astronauts aboard the Apollo 8 mission of 1968 were the first humans to see the far side of the moon.

#### **Is the dark side very different from the near side?**

The major difference between the two sides is that the near side is relatively smoother and has many more 'maria' or large volcanic plains compared to the far side. On the far side however, there are huge craters, thousands of kilometres wide, which have likely resulted from collisions with asteroids. While both sides of the moon in its formative phase were similarly bombarded, the crust on the near side is thinner because of which, over millions of years, the volcanic lava in the lunar crust has flowed more extensively into the thinner side and filled up its craters. The resulting plains that have thus formed are far more conducive to space missions because they provide a relatively flat terrain for landers and rovers. Chandrayaan-3 identified an area 2.4 km wide and 4.8 km long that had spots of 150 m spaces that would be conducive to a safe descent. China's Chang é-4 lander remains the only one to have successfully landed on the far side. This vehicle landed on the Von Karman crater situated within a larger 2,500 km wide crater called the South Pole Aitken basin.

#### **What's special about the Chandrayaan-3's landing?**

The Chandrayaan-3 mission, while still on the near side, has managed to land Vikram the closest ever to the lunar South Pole. The coordinates of Chandrayaan-3 at 69.36 S and 32.34 E make it about 600 km away from the South Pole. The choice of being as close as possible to the South Pole was to get closer to a "permanently shadowed region" or where no sunlight ever reaches, A.S. Kiran Kumar, former Chairman, Indian Space Research Organisation, told The Hindu. This would mean increasing the chances of encountering frozen water-ice along with several "interesting deposits" that can reveal more about the moon and its harvestable resources. The Vikram lander "wasn't exactly in a shadowed region" as it was necessary to shine sunlight on the lander and rover to charge their solar batteries to keep them powered. The mission's guiding purpose was to execute a successful controlled or 'soft landing' and the chances of doing that best while being near the South Pole were best served by keeping it in the near side, said Mr. Kumar. Crucially, landing on the far side would have meant no direct, line-of-sight communication with the Earth, necessary for regular near-real-time updates. "In such a situation you will need a relay — something that will communicate with the rover and then transmit to the Earth (and vice versa). While the Chandrayaan-2 orbiter (from the 2019 mission) is still functional you would have to reorient its orbit to function as a relay. This would not only mean moving it further away from the moon in a different elliptical orbit but also delays of up to half a day in transmitting and receiving



information. It's always the objectives of the mission that determine the choice of landing locations," he added.

## ON THE MOON, OVER THE MOON

At 5.40 p.m. on August 23, the Chandrayaan-3 lander was a 1.7-tonne hunk of metal, plastic, and glass speeding in an orbit some 30 km above the moon. But in the next 23 minutes, it had made history by slowing down, righting itself, and — guided by a suite of sensors and actuators — gently descending to the moon's surface. As it touched down shortly after 6 p.m., people gathered at the various Indian Space Research Organisation (ISRO) centres, and across India were jubilant. India is only the fourth country in history to have soft-landed a spacecraft on the moon, and the first to have done so in the moon's South Polar region. The feat illustrated a simple fact of complex space flight missions: by virtue of their enormous hunger for resources but at the same time capacity for caprice, succeeding at them is indistinguishable from a triumph of human will. That is why they are capable of galvanising people — as Chandrayaan-3 has now done for India. The immediate implication of the Chandrayaan-3 lander now sitting on the moon is that ISRO took away the right lessons from the failure of the preceding mission, Chandrayaan-2. In September 2019, as the Chandrayaan-2 lander was 2.1 km above the lunar surface, ISRO lost contact. Based on data transmitted by the lander until then and that from other sources, including the Chandrayaan-2 orbiter, ISRO pieced together the distal causes of the lander's premature demise. Experts at ISRO then modified 21 subsystems to give rise to the upgraded Chandrayaan-3 lander. The latter is particularly distinguished by the redundancies built into it: if one component or process had failed, another would likely have taken over.

Taking a broader view of time, Chandrayaan-3 sits at an important juncture. India is now a member of the Artemis Accords, the U.S.-led multilateral effort to place humans on the moon by 2025 and thereafter to expand human space exploration to the earth's wider neighbourhood in the solar system. Given the firsts that India has now achieved, it has an opportunity to lead the other Artemis countries interested in maximising the contributions of the space sector to their economies, alongside the U.S. While Russia and India were not racing to land on the moon this week, the failure of Russia's Luna-25 spacecraft on August 19 foretells the country's ability to contribute in more limited fashion, in this decade at least, to the International Lunar Research Station programme, which it leads together with China as a parallel axis to the Artemis Accords. With Chandrayaan-3, India has also demonstrated familiarity with the major types of interplanetary spacecraft: orbiters, landers, and rovers. The Chandrayaan-3 rover is rudimentary, and speaks to an important focus area for the Indian space programme: the planning and implementation of scientific missions. The data from Chandrayaan-3's scientific instruments will be crucial because the mission will be the first to physically, chemically, and thermally characterise the soil, subsoil, and air near the moon's South Pole on location. India has some measure of technological superiority now compared to most other space-faring countries, and it should press the advantage by going to more places in the solar system and conducting stellar science. The better space-based scientific instruments currently operated by India are largely concerned with earth-observation and remote-sensing; AstroSat is a notable exception as the forthcoming Aditya-L1, XPoSat, and NISAR missions are expected to be. In the relatively recent past, Chandrayaan-1 was scientifically well-equipped whereas the Mars Orbiter Mission had room for improvement (it was a technology demonstrator but at the same time it did get to Mars). Better science results demand more investment in research, both in the public and private sectors, rather than spending cuts, and mission design that puts scientific outcomes before engineering thresholds and launchability.



## ASTRA AIR-TO-AIR MISSILE TEST-FIRED FROM TEJAS IN 'TEXTBOOK LAUNCH'

An Astra indigenous beyond-visual-range air-to-air missile was successfully test-fired from the light combat aircraft (LCA), Tejas, off the coast of Goa on Wednesday.

On Tuesday, the Chief of the Air Staff, Air Chief Marshal V. R. Chaudhari, reviewed the status of the LCA programme at the Air Headquarters.

"The missile release was successfully carried out from the aircraft at an altitude of about 20,000 ft. All the objectives of the test were met and it was a perfect textbook launch," a Defence Ministry statement said.

The test launch was monitored by the Test Director and scientists of the Aeronautical Development Agency, the Defence Research and Development Organisation, and Hindustan Aeronautics Ltd., along with officials from the Centre for Military Airworthiness and Certification and the Directorate General of Aeronautical Quality Assurance. Astra is meant to be used to engage and destroy highly manoeuvring supersonic targets. Defence Minister Rajnath Singh said the launch would significantly enhance the combat prowess of Tejas and reduce the dependence on imported weapons.

On the Air chief's review of the LCA programme which saw senior functionaries from the Ministry of Defence, DRDO, HAL and ADA, the IAF said in a statement, "During the review, it was brought out that all contracted fighter variants of the LCA Mk-1 had been delivered to the IAF."

The IAF has earlier contracted 40 LCA-MK1 in two batches which include 32 single-seat fighters and eight twin-seat trainers. The IAF contracted 83 LCA Mk1A in 2021 and the deliveries are scheduled to begin by February 2024. The Air chief indicated that the LCA Mk1A could be inducted in a newly raised squadron in one of the IAF's operational bases, early next year, the statement said.

## EXPRESS VIEW ON JADAVPUR UNIVERSITY STUDENT DEATH: END RAGGING

The suspected suicide of a first-year Jadavpur University (JU) student has cast the spotlight on the culture of torture and abuse that often passes off as a coming-of-age ritual on the country's campuses. The 18-year old's family has alleged that he was subjected to ragging — by all accounts, a mild term to describe the humiliation and coercion senior students inflict on young entrants to colleges and universities.

The university and the police are conducting investigations and 12 people, including JU students and alumni, have been arrested. The law will, of course, take its course in this case. But it's high time that education administrators and student bodies come together to find ways to end the sadistic practice that has been psychologically scarring youngsters for decades.

The transition from school to college or university is a critical phase in the life of students, many of whom — like the first-year JU student — come from small towns and rural areas. Their excitement at entering the portals of institutions that promise social mobility is often tempered by nervousness in an unfamiliar milieu. It's up to the universities to make sure that this experience is not overwhelming. But they have not always been up to this task.

Reports in the JU case have highlighted that students who have long graduated continue to occupy hostel rooms and bully new entrants. In several other institutes, seniorism combines with caste,





class and gender privileges to make life difficult for first-year students — even after two verdicts of the Supreme Court.

In 2001, the Court asked higher educational institutions (HEIs) to set up proctoral committees and create internal mechanisms to address complaints against ragging. Then, in 2009, after a 19-year-old medical student was tortured to death by his seniors, the SC constituted a committee headed by former CBI director R K Raghavan to deal with the issue of ragging. The panel's recommendations were accepted by the UGC the same year.

The regulator asked HEIs to set up a committee comprising faculty, administrators and students and “promote healthy interaction between freshers and seniors”. However, the continuing cases of bullying in these institutions suggest that these norms are either not being adhered to or not being implemented effectively. The regulator has noted that JU's response to its query on the 18-year-old student's death did not have details on the preventive measures taken to eliminate incidents of ragging.

According to an RTI response by the UGC this month, 25 students committed suicide since 2018 because they were ragged. Enough is enough. HEIs must crack down on this brutishness, adhere to SC and UGC norms.

#### NATIONAL CURRICULUM FRAMEWORK PROPOSES BOARD EXAMS TWICE A YEAR

Students in Classes 9 and 10 will need to learn three languages, of which at least two will be Indian tongues. In Classes 11 and 12, students will have to learn two languages, one being of Indian origin, says the final National Curriculum Framework released by the National Council of Educational Research and Training (NCERT) on Wednesday.

The NCF was released by Union Education Minister Dharmendra Pradhan on Wednesday. Currently, students in Classes 9 and 10 study two languages, and students in Class 11 and 12 learn one.

The NCF expects students to achieve a “literary level” of linguistic capacity in at least one of these Indian languages, the draft says. The NCF has also said that all students will be allowed to take Board exams at least two times in a school year, with only the best score being retained.

The NCF, drafted by the National Steering Committee headed by former Chairman of the Indian Space Research Organisation (ISRO) K. Kasturirangan, follows the lead of the National Education Policy (NEP), 2020, and forms the basis for formulating textbooks from Classes 3 to 12 under the Central Board of Secondary Education. Textbooks for Classes 1 and 2 have already been released by the NCERT.

So far, students from Classes 9 to 12 studied five mandatory subjects, with an option of adding one more. Now, the number of mandatory subjects for Classes 9 and 10 is seven, and it is six for Classes 11 and 12.

Optional subjects have been grouped in three parts in the NCF. The first includes art education, emphasising both visual and performing arts, with equal emphasis on making, thinking about, and appreciating works of art. It also includes physical education and vocational education.

The second group includes social science, the Humanities, and interdisciplinary areas. The third group includes science, mathematics, and computational thinking.



### Term-based systems

The NCF has recommended that in the long term, all Boards should change to semester or term-based systems, where students can be tested in a subject as soon as they have completed the subject, which would reduce the content load being tested in any one examination.

For Classes 6 to 8, the NCF states that 20% content would be from the local level for the social science curriculum, 30% content from the regional level, 30% from the national level, and 20% content would be global.

The “secondary stage” has been significantly redesigned to offer more flexibility and choice for students. There is no hard separation between academic and vocational subjects, or between Science, Social Science, Art, and Physical Education. Students can choose interesting combinations of subjects for receiving their school leaving certificates.

Environmental education is given emphasis across all stages of schooling, culminating in a separate area of study in the secondary stage.

“The textbooks for Classes 3 to 12 are to be aligned with 21st century requirements, making them rooted and futuristic,” the Education Minister said.

## THE SUPERPOWER OF OTT PLATFORMS

On August 8, Education Minister Dharmendra Pradhan launched the ‘State of Elementary Education in Rural India’ report which shows that schoolchildren spend most of their screen time playing games, watching movies or listening to songs. Accessing study materials and online tutorials featured way down the order.

Of the 49.3% of parents whose children used gadgets, 76.7% said that their children mainly used mobile phones to play video games, over 56% said that their children used phones to watch movies, 35% said they used phones to access online materials, and only 19% said they used phones to attend online tutorials.

Instead of seeing this trend as a cause for concern, it can be viewed as a promising opportunity where education meets entertainment. Traditional media consumption has increasingly transitioned to OTT platforms, which have the ability to make meaningful contributions to reading literacy and language learning.

Captions were invented in the U.S. in the early 1970s to make television accessible to people with various degrees of hearing impairments. Viewers without hearing disabilities also came to appreciate the value of captions and same language subtitling (SLS) as it helped them follow the dialogues better. Caption and SLS are now available in around 40-50 countries. But a major benefit of SLS — improving mass reading literacy — has not been leveraged by any country yet.

The PlanetRead survey estimates that of the billion “literate” people in the country, 600 million are weak readers. The survey, conducted in four Hindi-speaking States, measured literacy using two methods — the census method which relies on self-reporting and another which required people to read a Grade 2-level text.

An Ormax OTT audience report showed that India’s OTT base in 2022 was 424 million people, with a nearly 80% penetration in metros. Future OTT growth will predominantly come from rural areas where the preference tilts toward Indian language content.



SLS on all Indian language content is, therefore, a massive opportunity. Universalisation of SLS may act as an automatic reading practice in the viewer's language. The Billion Readers initiative of the PlanetRead organisation is scaling SLS on TV and streaming platforms to achieve that. Moreover, under the Rights of Persons with Disabilities Act, 2016, all OTT platforms are required to offer SLS with their content. The Ministry of Information and Broadcasting framed the Accessibility Standards, 2019 mandating SLS on half the content on TV by 2025.

PlanetRead conducted a survey of 2,673 movies/shows produced in 2022-23 that are on India's top five OTT platforms – Hotstar, Netflix, Amazon Prime, Zee5, and Sony Liv. Almost all English language content on OTTs is available with English subtitles. In contrast, SLS is missing from most Indian language content.

Netflix leads SLS implementation in Indian languages with one-third of the content having SLS. Amazon Prime is a distant second (10.1%), while the other big OTT platforms have barely made a start.

SLS penetration is higher on content produced by the platforms themselves. Of the original Indian language content produced by Netflix and Amazon Prime, SLS is on 92.3% and 81.8% of content, respectively (Chart 4). However, Hotstar, Sony Liv, and Zee5 are yet to implement SLS in their original Indian language content. This suggests that if content producers were to include SLS and caption files, OTT platforms may include these features.

#### GENE-EDITED MUSTARD: LESS PUNGENT, MORE USEFUL

Indian scientists have developed the first ever low-pungent mustard that is pest and disease-resistant. It is based on CRISPR/Cas9 gene editing, while being non-GM and transgene-free. Why does this hold significance for consumers and oilseed producers?

Oilseeds yield not only oil for cooking and frying. Their so-called meal – the residual cake after extraction of oil from the seeds – is a protein-rich ingredient used in livestock, poultry and aqua feed.

India's most significant domestically-grown oilseed is rapeseed-mustard. Its share in the country's production of vegetable oils has been estimated at 42.6% (more than soyabean's 19.2%) and in that of meal at 30.3% (next to soyabean's 38.9%), as per the US Department of Agriculture's data for the marketing year ending September 2023.

Mustard seeds have high levels of glucosinolates, a group of sulphur and nitrogen-containing compounds contributing to the characteristic pungency of their oil and meal. While that limits the oil's acceptability among consumers – especially those preferring cooking medium having less strong flavour and odour – the problem is even more with the meal. Rapeseed meal is unpalatable to poultry and pigs, while having to be mixed with fodder grass and water for giving to cattle and buffaloes. Besides reducing their feed intake, high glucosinolates are also known to cause goiter (swelling of neck) and internal organ abnormalities in livestock.

#### Breeding for Canola-quality mustard

A lot of effort in the past two decades – including by scientists at Delhi University's Centre for Genetic Manipulation of Crop Plants (CGMCP) and the Indian Council of Agricultural Research – has gone into the breeding of rapeseed-mustard lines of so-called Canola quality.



The dry seeds from the normal mustard (*Brassica juncea*) cultivated in India contain 120-130 parts per million (ppm or mg/kg) of glucosinolates. This is as against the sub-30 ppm levels in canola seeds. By lowering the glucosinolate content to the same dry seed weight concentration, the scientists have bred mustard lines whose oil and meal match the standard of canola-quality rapeseed (*Brassica napus*) in terms of pungency.

However, large-scale cultivation of these canola-quality low-glucosinolate mustard lines hasn't taken place, a major reason being their vulnerability to pests and diseases. The same glucosinolates that limit the palatability of the meal and the exploitation of its true protein potential are also key arsenals of the Brassicaceae family crops – from mustard and canola to cabbage, cauliflower and broccoli – against invading pests, pathogens and termites.

“While the lowering of glucosinolate levels in seed is desirable for oil and meal, a concomitant reduction in the whole plant weakens its defence. The protection provided by glucosinolates to the plant should not be compromised,” said Naveen Chandra Bisht, senior scientist at the National Institute of Plant Genome Research (NIPGR) under the Department of Biotechnology (DBT).

### **A Gene Editing breakthrough**

That's where the role of novel breeding research comes in.

Glucosinolates are synthesised in the leaves and pod walls of mustard plants. Their translocation and accumulation in the seeds happens through the action of glucosinolate transporter or GTR genes. There are 12 such genes under two distinct classes of GTR1 and GTR2 with six copies each.

What Bisht and fellow researchers have done is to “edit” 10 out of the 12 GTR genes in ‘Varuna’, a high-yielding Indian mustard variety. For this, they used CRISPR/Cas9 – a gene-editing tool deploying an enzyme, which acts as a “molecular scissors” to cut the DNA at precise targeted locations of the gene, and then letting the natural DNA repair process to take over.

“We used CRISPR/Cas9 editing to create mutations and change the nucleotide or basic building block sequence of the DNA in the 10 target GTR genes. By doing this, their encoded proteins, responsible for transport of the glucosinolates to the seeds, were rendered non-functional,” explained Bisht.

The seeds of the resultant targeted genes-edited Varuna mustard variety had glucosinolate content well below the 30 ppm canola-quality threshold. At the same time, the other plant parts, especially the leaves and pod walls enclosing the seeds, had significantly higher glucosinolate accumulation.

The GTR-edited low-seed high-leaf glucosinolate lines were tested for resistance against the virulent fungal pathogen *Sclerotinia sclerotiorum* and the insect pest *Spodoptera litura*. The edited lines displayed defence response against these at par with or better than that of the wild-type mustard. The higher glucosinolate concentration in the leaves and pod walls, due to their impaired transport to the seeds, clearly had a role. The scientists at NIPGR, the lead lab, and CGMCP have published their research findings – the outcome of a DBT-funded project – in the high-impact *Plant Biotechnology Journal*.

### **GM versus GE**

Bisht emphasised that the new GTR genes-edited mustard lines are transgene-free or non-genetically modified (GM). They contain no foreign genes like those of the *Bacillus thuringiensis*



bacteria in cotton or Bar-Barnase-Barstar (isolated from other soil bacteria) in the GM hybrid mustard (DMH-11) bred by CGMCP scientists led by the former Delhi University vice chancellor Deepak Pental.

The low-seed high-leaf glucosinolate mustard lines developed by Bisht and other scientists are genome edited or GE, as opposed to GM or transgenic plants. While the Cas9 enzyme, derived from the *Streptococcus pyogenes* bacteria, was used to cut the DNA of the targeted genes in the first-generation plants, this protein is segregated out in the subsequent generations. The final GE lines contain no Cas9 protein and are transgene-free.

GM crops are currently subjected to stringent “environmental release” regulations in India, not just for commercial cultivation but even field trials and seed production. Such release is contingent upon clearance from a special Genetic Engineering Appraisal Committee (GEAC) under the Ministry of Environment, Forest and Climate Change (MoEFCC). The GEAC’s green signal is itself not binding on the Union Government, which gives the final nod.

On March 30, 2022, an office memorandum from the MoEFCC exempted GE plants “free of exogenous introduced DNA” from the requirement of GEAC approval for open field trials leading to commercial release. Such clearance is now necessary only at the level of an Institutional Bio-safety Committee (IBSC), comprising scientists from the institutions engaged in the GE crop development and from the DBT.

“We have prepared the document for submitting to the IBSC and are hopeful of conducting open field trials of the new GE mustard line in the coming rabi planting season (October-November),” Bisht told The Indian Express.

#### **Why is this work important?**

India is a huge importer of edible oils. These imports were valued at \$20.84 billion (Rs 167,270 crore) during the fiscal year ended March 2023, while meeting over 60% of the country’s consumption requirement.

Given the massive foreign exchange outgo on account of imports, there is a dire need to boost domestic oilseeds production through focused breeding for improving crop yields, pest and disease resistance, and product quality.

Mustard and soyabean are India’s most widely-cultivated oilseed crops, planted annually on 9 million and 12.5 million hectares area respectively. Its higher average oil extractable content (38% versus 18% for soyabean) makes mustard the bigger “oilseed” crop, while a source of both fat for humans and protein for animals.

GM hybrid mustard and the new GE low-seed high-leaf glucosinolate lines are major plant breeding advancements – from Indian scientists – that can go some way towards bringing down the dependence on imported vegetable oils.

### **MINISTRY SUSPENDS ORDER MANDATING DOCTORS PRESCRIBE ONLY GENERIC DRUGS**

Thursday evening saw the end of a half-month stand-off between the National Medical Commission (NMC), India’s regulatory body guiding medical professionals and the Indian Medical Association (IMA), a national voluntary organisation of physicians with over three lakh members.



The two had locked-horns over one of the provisions of the NMC's notification on August 2 asking registered medical practitioners (RMP) to prescribe generic medicines only. The Health Ministry now seems to have bought time for both parties.

In its latest notification the NMC has suspended proposed regulations until further notifications. "The NMC Registered Medical Practitioner (Professional Conduct) regulations, 2023 are hereby held in abeyance with immediate effect," noted the Commission. Said Dr. Sharad Agarwal, national president, IMA: "This is a grand victory as the regulations have been held in abeyance. Medical community has prevailed for the good of the people."

The previous NMC's Ethics and Medical Registration Board notification reads: "Every RMP should prescribe drugs using generic names written legibly and prescribe drugs rationally, avoiding unnecessary medications and irrational fixed-dose combination tablets." The IMA had demanded its withdrawal stating that it should not be enforced till there is assurance that the medicines meet quality standards.

## DENGUE CASES ON RISE: WHAT'S THE DENV-2 STRAIN ALL ABOUT? WHY HYDRATION IS THE KEY TO MANAGING THE INFECTION

Since dengue can be controlled with adequate hydration, early diagnosis is necessary. Take the antigen, antibody, CBC and LFT tests. Rush to the hospital if your platelet levels have fallen to 50,000 with bleeding and low blood pressure for prompt management of parameters, says Dr Suranjit Chatterjee, Senior Consultant, Internal Medicine, Indraprastha Apollo Hospital, Delhi

By now, we are being told that the Denv-2 strain of the dengue is in circulation and although it is a more severe strain, a little bit of vigilance is expected to prevent complications and see us through the season. Its symptoms are similar to all other variants of dengue with patients more prone to shock and haemorrhage if not diagnosed and addressed in time.

### SIGNS AND SYMPTOMS

So let's understand the signs and symptoms. Usually patients have a sudden onset of high grade fever which persists, nausea, pain in the eye socket, extreme fatigue, body ache, abdominal pain and rashes. At this stage platelets may not have fallen that much and there could be a dip in white blood cells. As the fever goes on undiagnosed, it could be accompanied by liver pain, vomiting, mucosal bleeding, reduced urination and low blood pressure. Laboratory tests show an increase in red blood cells and a rapid decrease in platelets. In severe haemorrhagic fever, the patient has severe plasma leakage leading to a haemorrhagic shock, fluid retention in the pleural and abdominal cavities and severe breathing difficulty. This could lead to severe bleeding and organ failure.

The dengue virus, which is spread by the mosquito, has a two to 14-day incubation period but usually manifests signs and symptoms between four and seven days. Usually, the patient feels better after the fever subsides in four to five days. And if during that period, the patient has not kept himself well-hydrated, complications could arise after Day 4. Dehydration is the enemy and if you want to avoid hospitalisation, drink between three to five litres of water a day. Let me add a caveat that those with heart, liver and kidney ailments, who may not be allowed so much water, have to be guided by their medical practitioner on use of water.

Since dengue can be controlled with adequate hydration, early diagnosis is necessary. And if you get high grade fever at this time of the year, take the dengue NS1 antigen test, which detects the

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



non-structural protein NS1 of the dengue virus that is secreted into the blood during infection. It can be done within the first 48 hours and give you a quick diagnosis in the initial days. Then take the IgM antibody test on the fourth or fifth day. That's because as the immune system fights the infection, IgM antibodies against the virus are detectable only on the fourth day after onset of symptoms and are detectable for approximately 12 weeks. Simultaneously, you should get a complete blood count (CBC) done, which may have to be repeated on alternate days or even everyday to check for platelet levels. Also do a liver function test (LFT) as markers are deranged during dengue. One of the most important markers is the PCV (packed cell volume), which is a measure of blood viscosity. Once the blood viscosity rises, platelets dip. This indicates an increase in red blood cells or dehydration. While people talk about platelet dips, haemo concentration is critical in understanding the severity of infection. This is often indicative of plasma in the blood leaking that can cause fluid accumulation in the abdomen and lungs. This is the result of severe dehydration and at this stage you need intravenous fluids to increase the blood volume and prevent the body from going into shock.

#### TREATMENT PROTOCOL

There is no specific treatment for dengue. All you have got to do is keep the fever down with paracetamol every six to eight hours. Your body ache may be troubling you but taking painkillers or non-steroidal anti-inflammatory drugs (NSAIDs) can bring down platelets further and cause breathing difficulties. Stay away from antibiotics as they do not work on the virus. Rush to the hospital if your platelet levels have fallen to 50,000/cu mm with bleeding and low blood pressure. You need medical management of parameters under the doctor's supervision. A platelet transfusion happens only when platelets fall really low to less than 20,000/cu mm with bleeding. Those who have a count between 20,000 and 40,000/cu mm are at moderate risk and require transfusion only if they have some haemorrhagic tendencies and other complications caused by underlying conditions.

Let me say that the best way of disease management is to rest, take paracetamol, have plenty of fluids, do blood tests and report your symptoms to the doctor so that you do not get to the dangerous threshold. So far, according to the WHO, one vaccine (Dengvaxia) has been approved and licensed in some countries. However, only people with evidence of past dengue infection can be protected by this vaccine.

#### EXPRESS VIEW: MAPPING LONG COVID

A research paper published by the Indian Council of Medical Research (ICMR) has revealed that 6.5 per cent of the patients who were hospitalised following a moderate or severe bout of Covid died the following year. This is significant because it is the first time that the country's premier medical research agency has put a figure to mortality amongst people who couldn't fully recover after contracting Covid. The WHO estimates that 10 to 20 per cent of Covid patients develop prolonged symptoms. The ICMR study is more conclusive — it reported that more than 17 per cent of patients who were hospitalised after September 2020 experienced "post-Covid" conditions. These conditions included fatigue, breathlessness, cognitive abnormalities and brain fog. The ICMR study shows that the risk of death in the year after discharge was greater among men, senior citizens and people with underlying health conditions.

The ICMR commenced its study before the WHO came out with details of post-Covid complications, also known as "Long Covid". Unlike the Indian agency, which zeroed in on hospitalised patients, the premier global health body maintains that Long Covid can arise



irrespective of the severity of the infection or the patient's age. Symptoms can appear in patients who were previously healthy. The WHO's conclusions are largely based on factsheets collected from its European wing. And the global health agency has, on more than one occasion, underlined the need to understand Long Covid in other parts of the world. It has also acknowledged that there are gaps in its understanding of post-Covid complications. Plugging them is not always an easy task because the virus affects multiple parts of the body and researchers and clinicians worldwide have identified numerous post-Covid symptoms — brain fog, for instance, does not manifest in only one way. Some experts, including in India, talk of cardiac involvement in Covid. But that is difficult to quantify as only a small section of Covid survivors undergo detailed evaluation. That said, Long Covid is now a topic of detailed research in several parts of the world. For instance, a study commissioned by the National Institutes of Health (NIH) in the US reported in May that Long Covid is more common and severe among people infected before Omicron became the dominant variant in 2021. Earlier this month, the NIH began a study to evaluate treatments for Long Covid symptoms such as brain fog and heart-related problems.

The WHO suggests that governments and health services should undertake evidence-based interventions to come to terms with Long Covid. The ICMR study is a beginning for India. More detailed studies are required to understand the extent to which post-Covid complications have affected patients in India.

## CRY OF THE HILLS

The past six weeks of torrential rain in the hilly states of Uttarakhand and Himachal Pradesh — both with some of the highest mountain ranges in the region, accompanying glaciers and mighty rivers — have badly hit many cities and villages.

In late 2022, Joshimath town in Uttarakhand came under a crisis, when land began sinking from various factors, including manmade ones such as years of unplanned construction, hydroelectric power projects and the lack of a proper drainage system. In 1991, an earthquake had almost flattened Uttarkashi. That the area is fragile has been established beyond doubt.

The neighbouring State of Himachal Pradesh has tapped into the potential of being a tourist destination and there has been rampant development here too. Shimla and Manali serve as the gateway to higher mountain regions where tourism plays a huge role in the economy.

To meet the growing demand for tourism in the region — religious tourism in Uttarakhand, and adventure tourism on the Himachal side, the administration began expanding the road network.

Townships have come along these roads, and more people have settled expecting the expanded roads will bring more economic activity to the region. But come rains, and a different truth starts playing out. People, trees, and vehicles have been washed away.

This time, the States have seen enormous loss of lives. Roads have been swept away, and so have people's homes. A part of the heritage Kalka-Shimla Railway line was battered.

The Himachal Pradesh government has declared the rain havoc a State calamity. More than 330 people had lost their lives and 12,000 houses have been damaged. In Uttarakhand, at least 75 people have died in rain-related accidents since the monsoon began.





## RAPTORS MAKE POWER TOWERS THEIR HOME

White-bellied sea eagles in India are beginning to emulate their counterparts in Australia and Thailand by making their homes on power towers holding high-tension wires.

The use of man-made structures as nesting sites can be both risky and beneficial to these coastal raptors and humans in the vicinity, but the development points to a lack of trees and other natural nesting alternatives, a study published in the latest issue of the conservation-themed monthly, *Journal of Threatened Taxa* said.

The nests of the white-bellied sea eagles were found on powerline towers about 2 km away from the sea in Ramanathapuram of Tamil Nadu. The nesting sites were strategic for the birds to conveniently scan the marine area for food, the study said.

The white-bellied sea eagle (*Haliaeetus leucogaster*) is a resident raptor belonging to the family Accipitridae. It has a wide distribution range on the sea coast of India from Mumbai to the eastern coast of Bangladesh, and Sri Lanka in southern Asia, through all coastal south-eastern Asia, southern China to Australia.

The raptor, a diurnal monogamous bird of prey, is categorised as being of 'least concern' on the Red List of the International Union for Conservation of Nature.

Feeding mainly on sea snakes and fish, the bird is occasionally seen in inland waters along tidal rivers and in freshwater lakes. It occupies the same localities for years and generally builds nests in tall trees near the seacoast, tidal creeks, and estuaries.

Each nest, about 1.4 metres, was at a height of about 18 metres from the ground. The nests were large deep bowls constructed of thick sticks, twigs, and branches and lined with grass, seaweed, or green leaves.

The team observed an incubating adult on the nest of the first pylon on its next visit a month later, and also found a fourth nest on another pylon.

## STATE OF BIRDS: MOST SPECIES SHOW DIP, INDIAN PEAFAWL AMONG THOSE FLOURISHING

THERE IS a general decline in numbers in most bird species in the country – some recording current decline and others projected to decline in the long term, according to a report based on data from about 30,000 birdwatchers that was released on Friday. Raptors, migratory shorebirds and ducks have declined the most, the report has found.

The State of India's Birds, 2023 report, also says that several bird species such as the Indian Peafowl, Rock Pigeon, Asian Koel and House Crow are not only healthy in both abundance and distribution, but showing an "increasing trend".

The Peafowl, India's national bird, is one of the most rapidly increasing species in the country today, it says, "expanding into habitats where it has never occurred previously".

"In the last 20 years, Indian Peafowl has expanded into the high Himalaya and the rainforests of the Western Ghats. It now occurs in every district in Kerala, a state where it was once extremely



rare. Apart from expanding its range, it also appears to be increasing in population density in areas where it occurred earlier,” the report says.

Among the bird species that have been doing well, compared to their pre-2000 baseline, the Asian Koel has shown a rapid increase in abundance of 75%, with an annual current increase of 2.7% per year. So have the House Crow, Rock Pigeon and the Alexandrine Parakeet that has established new populations in several cities.

Released after a gap of three years, the report is an assessment of the distribution range, trends in abundance and conservation status of 942 of India’s 1,200 bird species and has been carried out by 13 partner organisations, including the Wildlife Institute of India (WII) and Zoological Survey of India (ZSI).

The assessments rely on three indices. Two of them are related to change in abundance — long-term trend (change over 30 years) and current annual trend (change over past seven years) — and the third is a measure of distribution range size in India. According to the report, long-term trends as well as current annual trends could not be established for many of the 942 species.

Of the 338 species, for which long-term trends have been identified, it says, 204 or 60% have declined in the long term, 98 species are stable, while 36 have increased. Similarly, current annual trends could be determined for 359 species, of which 142 species or 39% are declining, 64 are in rapid decline, 189 are stable and 28 bird species are increasing.

The International Union for Conservation of Nature (IUCN) Red List of Threatened Species shows that 49% of bird species worldwide are declining in population, compared with only 6% increasing.

The range size, or measurement of a bird species’ territory and home range, was assessed for all 942 bird species. According to the report, the range size of 39% bird species is moderate, 33% is very large while 28% species inhabit a “restricted and very restricted” area.

Using IUCN standards, the report says that 178 bird species are high conservation priority, 323 as moderate priority and 441 as low priority. Species of high priority include those whose abundance indices have declined considerably in the long term and continue to decline today.

“It is very difficult to carry out a census on birds. It is not done anywhere in the world. Instead, we look at the ‘abundance’ of the bird species based on sightings. This gives us an indication of the population size as well as its distribution,” says Dr Ghazala Shahabuddin of ATREE, one of the lead authors of the report.

The report found that bird species which are “specialists” – restricted to narrow habitats like wetlands, rainforests and grasslands, as opposed to species that can inhabit a wide range of habitats such as plantations and agricultural fields – are rapidly declining.

The “generalist” birds that can live in multiple habitat types are doing well as a group, the report says.

“Specialists, however, are more threatened than generalists. Grassland specialists have declined by more than 50%, indicating the importance of protecting and maintaining grassland ecosystems.



A steep decline of birds that live in a wide variety of open habitats in addition to grasslands suggests a need to investigate threats in, for example, open agricultural landscapes and fallow land. Birds that are woodland specialists (forests or plantations) have also declined more than generalists, indicating a need to conserve natural forest habitats so that they provide habitat to specialists,” says the report.

Abundance trends of migratory species show that long-distance migrants, such as migratory birds from Eurasia or the Arctic, have declined the most – by more than 50% – followed by short-distance migrants. Shorebirds that breed in the Arctic have been particularly affected, declining by close to 80%. By contrast, resident species as a group have remained much more stable.

Dietary requirements of birds have also shown up in abundance trends. Birds that feed on vertebrates and carrion have declined the most, “suggesting that this food resource either contains harmful pollutants”.

Vultures were nearly driven to extinction by consuming carcasses contaminated with diclofenac. One of the most prolific birds in India, their numbers had dropped to near zero in the 1990s-early 2000s. Raptors are one of the most affected species in the country due to agrochemicals, the report says.

White-rumped Vulture, Indian Vulture, and Red-headed Vulture have suffered the maximum long-term declines (98%, 95%, and 91%, respectively). Today, remnant vulture populations occur in and around Protected Areas.

The report has found that birds that feed on invertebrates, including insects, are declining rapidly, which is in keeping with the worldwide trends of decrease in insect populations. The trend analysis shows that birds that feed on fruits and nectar are doing well. Birds that are endemic to the Western Ghats and Sri Lanka biodiversity hotspot have rapidly declined in India over the past few decades.

India is home to 232 endemic species, found nowhere else in the world. In the Western Ghats, most endemics are inhabitants of rainforest, such as White-bellied Treepie and Wayanad Laughingthrush. In particular, the Great Grey Shrike has shown a long-term decline of more than 80%.

Ducks are also rapidly declining in India. India hosts eight resident and 35 migratory species, which occupy a range of habitats, including inland lakes and tanks, submerged paddy fields, rivers, forest pools, and coastal lagoons. Large congregations of ducks occur in Chilika, Pulicat, Rann of Kachchh, Maguri, Loktak, Sambhar, and Keoladeo. The Baer's Pochard, Common Pochard, Andaman Teal have been found to be most vulnerable.

Riverine sandbar-nesting birds are also showing a decline due to widespread pressures on rivers from irrigation schemes, transportation, human disturbance, domestic use, and pollution from agricultural and industrial chemicals, variations in the water level and sand mining.

Of the large waterbirds, the Glossy Ibis and Black-headed Ibis have increased dramatically in abundance over the past three decades, by over 130% and 80%, respectively. The Painted Stork and Spot-billed Pelican show a trajectory of increase and then more recent decrease of 2-4% per year to reach historical levels. But the Eurasian

Spoonbill has declined by more than 50% in the long term and by over 6% annually since 2015. Sarus Crane has rapidly declined over the long term and continues to do so.



Of the 11 species of woodpeckers for which clear long-term trends could be obtained, seven appear stable, two are declining, and two are in rapid decline. The Yellow-crowned Woodpecker, inhabiting widespread thorn and scrub forest, has declined by more than 70% in the past three decades.

While half of all bustards worldwide are threatened, the three species that breed in India – the Great Indian Bustard, the Lesser Florican, and the Bengal Florican – have been found to be most vulnerable.

#### PRESERVING THE SANCTITY OF GANDHI ASHRAM

In October 2021, the Gujarat government embarked upon an ambitious project to redevelop Mahatma Gandhi's Sabarmati Ashram. It said it would expand the Ashram from five acres to about 55 acres by relocating the approximately 275 families who lived on the premises as well as other trusts. Nearly two years since, the relocation is still ongoing and concerns about redevelopment persist.

Families were given the option of being compensated with cash, flats, or land plots. Most of the residential properties belong to the descendants of those who settled in the Ashram in the early 1900s. The State authorities recently allotted a plot of 3,400 sq m to rehabilitate 23 families who live on the premises of the Ashram. These families have formed a cooperative housing society to build their new houses on the plot given by the State government in the Vadaj area. Over a dozen families are yet to be rehabilitated.

In April this year, the Ahmedabad civic body, which is implementing the project, razed more than 50 slum dwellings opposite the Ashram citing encroachment on a town planning scheme as the reason. In an affidavit submitted in the High Court, the civic body argued that the demolition was essential in the interest of the development of the Gandhi Ashram Memorial and Precinct Development Project. The civic body and revenue authorities maintain that those dwellings were not entitled to the rehabilitation package. According to sources, the entire rehabilitation exercise will likely be completed in the next two to three months after which the real redevelopment work will begin. However, there are concerns that the State authorities have not held any open public consultations.

The Ashram was approximately 120 acres when it was established in 1917. Its buildings were spread across 47 acres along the Sabarmati river. During Mahatma Gandhi's time in the Ashram from 1917 to 1930, there were 63 buildings within the Ashram's premises. Today, only 43 of the original buildings remain.

"The area that is known to the world as the Gandhi Ashram today is merely five acres. The Ashram will be expanded to include all the original 43 buildings... and made accessible to all visitors," a State government presentation said. "Since most of the original buildings lie outside today's Ashram, visitors get an incomplete sense of how the original Ashram functioned and how it embodied Gandhiji's philosophy. Many of the original buildings are also in disrepair. To add to this, the atmosphere of the Ashram is also rudely disrupted by the noise of traffic, and it is often crowded on account of the increasing number of visitors," it added.

The redevelopment plan includes closing the busy four-lane road that passes through the Ashram area and making all land parcels belonging to different trusts and residential properties a contiguous area.



Last year, in an affidavit in the High Court, the State government had informed the court that the five trusts on the premises are on board and have approved the redevelopment project prepared by the government. The Ashram is now managed by the Sabarmati Ashram Preservation and Memorial Trust.

Following the affidavit, the Court dismissed a PIL filed by Gandhi's great grandson, Tushar Gandhi, who had challenged the redevelopment plan. "The proposed project will not only uphold the ideas and philosophy of Mahatma Gandhi which would be for the benefit of society and mankind at large but the said Gandhi Ashram will be a place for learning for mankind of all age groups," the court said.

At least 130 personalities from various walks of life including Gandhi's grandson, Rajmohan Gandhi, have opposed the plan, calling it the "second assassination of the Mahatma".

Sudarshan Iyengar, former Vice Chancellor of Gujarat Vidhyapith and a trustee of SAPMT, has said redevelopment is a step in the right direction. Kartikey Sarabhai, another trustee, has also supported the move. The State government has emphatically held that the redevelopment project will be done in a manner that is respectful of the original Ashram's ethos as it will retain the values that Gandhiji preached — austerity, simplicity, and authenticity.

Yet, doubts remain. This is because while the State authorities have said the revamped Ashram will retain the philosophy of Gandhi, it has also emphasised making the Ashram a "tourist place" with modern amenities. This, feel many Gandhians, will reduce a sacred place to a "State-run amusement park."

## THE INFLUENCE OF VIKRAMADITYA

Around the 18th century, through Bhavishya Purana (chronicle of the future), three kings were projected as defenders of the dharmic way of being. This late, and much altered document, states that at the start of Kali Yuga, Shiva sent Vikramaditya to earth, gave him a throne with 32 wise yoginis to advise him, and a ghost called Vetala to coach him.

Vikramaditya hosted a gathering of sages to reaffirm Vedic values. He marked the four corners of India: the river Sindhu in the West, the mountains of Badri in the North, the city of Kapila (Kapilavastu) in the East, and Sethubandha (Tamil Nadu) in the South. He married local princesses and established 18 great kingdoms. He uprooted Buddhism in defence of Vedic faith. His grandson, Shalivahan, fended off the invading Shakas. The Purana then foretells that Bhoja of Ujjain, who will establish dharma, will face a demon called Mahamada (great intoxication) who will rise in the deserts west of the Indus river, and whose followers wield clubs (musala) to purify lands, instead of kusha grass, as Hindus do.

No rewards for guessing who the text refers to. And clearly this 'prophecy' was manufactured post-facto.

But the stories of Vikramaditya, Shalivahan, and Bhoja at one time served a larger purpose: it was a tool to educate young princes on governance. And what better way than storytelling. Although the name Vikramaditya was the title of many Gupta kings (4th century CE), the stories emerged a few centuries later, around the 8th or 9th century.



### Stories that travelled

This is how the collection of stories known as Singhasan Battisi (32 tales of the throne) begins.

In the middle of a field stood a mound. The farmer who owned the field would be generous every time he climbed the mound but stingy and quarrelsome every time he came down. This caught the attention of a king called Bhoja who ordered the mound to be dug up. Within, he found a throne. When he tried sitting on it, the throne threatened to kill him unless he displayed the 32 qualities of kingship, revealed through 32 stories. For this was the throne of the legendary Vikramaditya.

In the course of these stories, Bhoja learned how Vikramaditya was a great king, brave, curious, lucky, and generous, who could answer 25 riddles posed by a vetala (ghost), which form the folklore collection known as Vetala Pachisi. He also learnt how Vikramaditya could not escape death and was eventually killed by a potter-boy called Shalivahan.

The stories were so popular that they travelled overseas to Arabia and influenced folklore of the wise Solomon (Sulaiman), his magical throne and his army of djinns.

### Vedic memory

India's traditional calendars Vikram Samvat (57 BCE) and Shalivahan or Saka Samvat (78 CE) give the impression that Vikramaditya and Shalivahan were historical characters. Of the two calendars, Saka Samvat is older, appearing in coins that are 1,700 years old, and was used by Central Asian kings (Saka, Pahlava, Kushana) who favoured Buddhism and ruled much of North India. Vikram Samvat started being used extensively from the 9th century by Hindu kings such as the Paramars of Ujjain who claimed to have overthrown the foreign Sakas.

Stories of Vikramaditya, Shalivahan and Bhoja are legends: folklore with political implications in contemporary times. They need to be contrasted with myths, also folklore, but which establish world-views by explaining the origin of time, space and life. Ramayana and Mahabharata, and Puranas, form the latter category (mythological), and are closely linked to Vedic memory, and philosophy, and were composed to counter Buddhist and Jain myths. Ram is king, Krishna is king-maker, and both are avatars, earthly forms of the divine Vishnu, who institutes dharma in society, championing worldly duty with monastic restraint, which is why Ram is called Tapasvi Raja or the hermit-king and Pandavas are taught empathy and humility in their forest exile, before they can be kings.

In 500-year-old Tamil legends (Chola Purva Patayam), Vikramaditya appears to inspire Chola, Pandya and Chera kings to drive out Buddhists from their land. In older Jain narratives, Shalivahan is champion of Jains and enemy of Vikramaditya; but in later narratives, he is the son, or grandson of Vikramaditya, who defends India from Saka invaders. Such is the fluidity of legends.

### A hermit-king

Vikramaditya was a popular title used since the Gupta times by kings of Central and South India such as the Pratiharas, Paramaras, Chalukyas and Cholas. It means the radiant conqueror. Expanding territory was not enough to be a great king; one had to follow dharma and be a hermit-king. In stories, Vikramaditya resists the sexual advances of his sister-in-law.

Ramayana and Mahabharata do not refer to kings as patrons of the art, but Vikramaditya attracts talents around him: like the poet Kalidasa, the astronomer Varahamihira, and the linguist Vararuchi, who become part of the nine jewels (navratna) of his court. Shalivahan who learns



Sanskrit from Panini comes to appreciate the knowledge also found in Prakrit and even the languages of birds and ghosts, the Panchisi. Bhoja is a poet, grammarian and astronomer.

It is believed that these ideas began emerging as the Pratihara and Paramara kings faced the rise of Islam. Indeed, folklore, myth or legend played a strategic role in responding to politics and shaping the history of India.

#### A ROCK & TWO PILLARS: HOW 3 ASHOKAN-ERA EDICTS FOUND THEIR PLACE IN DELHI

In the heart of South Delhi, near Kalkaji temple in East of Kailash, one can find a piece of history that pre-dates the Chahamanas, Lodhis, and Khiljis, by several centuries. The rock edict, one among several scattered in different parts of the country, narrates emperor Ashoka's policy of Dhamma, which he began to disseminate after embracing Buddhism and ahimsa (non-violence) following his conquest in the bloody battle for Kalinga.

Today, the rocky hillock upon which the edict rests is surrounded by a lush garden. However, the inscription itself is inside an iron enclosure, and its engravings barely legible. Historian Upinder Singh, in her book, Delhi: Ancient History, surmises that the edict was placed near the spot where Kalkaji temple stands today as the area could have had an older shrine pre-dating the temple. Perhaps, the rock edict was placed to borrow legitimacy from the older shrine, she adds, emphasising it could be pure speculation.

Singh, a professor of history and Dean of Faculty at Ashoka University, also analyses the trade route theory. "The area fell on the arterial trade route that connected the Northwest part of the sub-continent to the Gangetic plains. The fact that a Mughal kos minar (milestone) was placed in the same area proves that it was along a major trade route," she added.

The other two spots where one can find Ashokan edicts in Delhi are on two pillars — one near Hindu Rao Hospital, and the other at Feroz Shah Kotla. However, these pillars were not originally established in Delhi. Originally from Topra (near Haryana) and Meerut, respectively, the columns were brought to the capital by Feroz Shah Tughlaq, who ruled Delhi in the 14th Century.

Legend goes that the emperor was fascinated by these pillars when he noticed them during his military campaigns. Shams Shiraj Afif in Tarikh-i-Firoz Shahi recalls how locals told the king that the pillars were the walking sticks of Bhima from the Mahabharata. Filled with admiration, Tughlaq decided to bring them to Delhi as trophies of his conquest.

Of course, no one could decipher the inscriptions back then. Afif recorded that a Brahmin scholar was then called to the court to translate the writings on the pillars, who interpreted them as a prophecy that "a great ruler named Feroz would one day rule over India". Whether Tughlaq accepted such a blatant attempt at flattery or not was not recorded.

The pillars today bear marks of the number of times they changed hands and ownership. The Delhi-Meerut pillar bears inscriptions from the 14th and 16th centuries, mentioning various people, including a goldsmith, and rulers. Who exactly these people are is still a mystery.

The Topra pillar has a 12th-Century inscription by Chauhan king Vigraharaja IV, boasting of his conquests of the Vindhya and how he defeated the outsiders (Turkish invaders) and "restored Aryan dominance" over his land.



### EXPRESS VIEW ON C R RAO: NUMBERS FOR THE PEOPLE

Mathematicians rarely acquire the kind of public fame that some other scientists do. A good part of that has to do with the fact they are engaged with ideas that appear abstract to lay people, even though many of those ideas might be enabling the “real things” that people regularly interact with. Some of the greatest names in mathematics in the last 150 years — David Hilbert, Georg Cantor, Kurt Godel, Paul Erdos — barely have any resonance among the general public. Srinivas Ramanujan is a rare exception. It is, therefore, not much of a surprise that C R Rao seems unfamiliar to most in the country. Rao, one of the biggest names in mathematics and statistics in recent times, passed away in the US on Wednesday, aged 103.

A former director of the Indian Statistical Institute, Rao made fundamental contributions to the field of statistics, many of which are part of econometric courses the world over. He developed methodologies that lead to much more reliable estimates of population-wide data or behaviour than was possible earlier. These are now widely used in research and policymaking exercises globally. As India began its journey as an independent nation, Rao pushed the government to collect more data and enabled the setting up of research units in government departments. He was one of those who sowed the seeds of data-informed policymaking in the country.

Rao moved to the US after retirement. He continued to be prolific till late in his life. As Partha Majumder, himself a distinguished biostatistician, noted in an obituary in this newspaper, Rao’s last published paper came when he was 100. He won several awards and accolades, including the Bhatnagar Prize, Padma Vibhushan, and the International Prize in Statistics, commonly considered to be the statistics Nobel. His was a life lived in the pursuit of knowledge, and the use of that knowledge for peoples’ benefit.

### EXPRESS VIEW: R PRAGGNANANDHAA

The silver medal in the Chess World Cup did not glitter like gold for 18-year-old R Praggnanandhaa. He hid his disappointment, though the words of consolation that he lost to arguably the greatest chess player of all time, Magnus Carlsen, would have rung hollow. Only he could fathom the hurt of losing the final after beating a raft of big shots and stretching the unflappable Norwegian to the tiebreakers. The second-place finish puts him in Candidates Tournament, the winner of which will wrestle for the World Championship title with Ding Liren, the throne’s latest occupant.

It was a coming-of-age on the big stage for the youngster from Chennai. His immense potential was spotted at so young an age that he was predestined to scale great heights. Block by block, he was making progress and recently breached the 2700 elo points barrier. In the past, he has beaten Carlsen himself thrice in the shorter versions of the game; he had an impressive run in the Chess Olympiad too, beating some of the established Grandmasters. But it is here that he came on his own, when he demonstrated the dizzying depths of his game. He is the youngest-ever finalist in this tournament; he was also lowest seeded (World No 31), to reach its final. En route, he defeated some of the finest in the business, scalping World No 2 and 3 Hikaru Nakamura and Fabiano Caruana, matching them, move for move. He showed his adeptness in the classical version, whereas previously he was considered stronger in the rapid and blitz forms.

Together with fellow teenager D Gukesh, Praggnanandhaa has whipped up a second chess moment for India, after the peak years of Viswanthan Anand.



**BUSINESS & ECONOMICS****DRIVEN TO TEARS**

With consumer food prices rising 11.5% in July, likely the third highest since the current retail inflation data series began in 2014, the government last Saturday made yet another gambit to arrest prices. A 40% export levy on onion exports was imposed with immediate effect till at least December 31. This move follows curbs on non-basmati rice shipments outside India in July, and stock limits on pulses and wheat imposed in June. Onion exports, which grew 65% last year, accounted for 8% of total domestic production. On Sunday, the government also announced a hike in buffer stocks of the curry essential by two lakh metric tonnes. Onion traders and farmers, in the midst of the first upturn in prices after almost two years, were not impressed. Markets were shut in protest in Nashik, Asia's largest onion trading hub, as farmers feared a glut and a price crash.

Maharashtra and Madhya Pradesh account for almost 60% of India's onion supplies, and the deficient rainfall this month in parts of these States after excess rains in July had put a question mark on the moisture-sensitive tuber's prospects this kharif season. These worries likely triggered the recent uptick in onion prices from around ₹23 a kilo two months ago to over ₹31 by this Monday. Relative to tomatoes, the other quintessential ingredient for Indian curries, this price surge was not as stark yet, although some analysts projected prices per kilo to touch ₹60-₹70 by September. To quell onion farmers' displeasure at the export levy imposed without a floor price, Food and Consumer Affairs Minister Piyush Goyal on Tuesday promised that onions will be purchased at a "historical high" price of ₹2,410 per quintal, and buffer stock procurements will be ramped up further if needed. A Bank of Baroda report cautioned that steps such as export curbs also have a tendency to reinforce the scarcity factor worrying markets and push up prices further. How this attempt to balance the interests of consumers and farmers plays out remains to be seen. A profligate use of such blunt policy interventions ends up distorting sowing preferences in the coming year, especially in the very crops that spurred more inflation this year. Building durable food supply chains, especially for vegetables that are traditionally susceptible to price volatility, needs greater attention so that monetary policy can focus on growth concerns. For instance, if tomato imports from Nepal helped cool their prices from triple digit levels a month ago, it makes eminent sense to engage with the neighbour for a longer-term supply plan for vegetables with some predictable purchase assurances built in.

**IRRIGATION IN FOCUS AS INDIA MOVES TOWARDS DRIEST-EVER AUGUST**

News reports and weather experts say that India might be facing its driest August in 100 years. As of Sunday, India had received 7% less rainfall cumulatively this monsoon compared to the long period average (LPA). This situation is expected to get worse. A recent report in Reuters quotes an India Meteorological Department official saying that India is expected to receive an average of less than 180 mm of rainfall this August, which is the lowest since records began in 1901.

Consequently, the sowing of kharif crops has been hit. Reports show that kharif sowing of pulses has come down by 10% compared to last year. Given that retail inflation of pulses accelerated to 13% in July, and especially with the retail inflation of toor dal rising to 34%, a historically low August rainfall may increase food prices further.

In India, it is widely understood that agricultural results are deeply linked to the south-west monsoon rainfall. A recent paper published as a part of the Reserve Bank of India (RBI)'s August



bulletin delves into the extent to which the dependency has changed over time and how improvements in irrigation coverage may have played a pivotal role. The paper shows that the south-west monsoon continues to play a major factor for both kharif and rabi crops. However, reliance on monsoon rainfall has reduced in recent times, it argues. Also, the impact has been less pronounced in areas where irrigation coverage has improved.

## WHAT IS RBI'S NEW PILOT FOR FRICTIONLESS CREDIT?

### The story so far:

On August 17, the RBI commenced a pilot programme endeavouring to evaluate the feasibility and functionality of the 'Public Tech Platform for Frictionless Credit'. The suggested platform would strive to "enable delivery of frictionless credit by facilitating seamless flow of required digital information to lenders."

### What is the platform for?

Digital delivery of credit (delivering credit/loans through digital means) or any loan is preceded by a process of scrutiny known as credit appraisal. The process attempts to evaluate and accordingly predict the prospective borrowers' ability for repayment of credit/loan and adhering to the credit agreement. This pre-disbursal process is particularly important for banks since it would in turn determine their interest income and impact on the balance sheet. The central banking regulator has observed that the data required for the process rests with different entities like central and state governments, account aggregators, banks, credit information companies, and digital identity authorities. Thus, being in separate systems, it creates "hindrances in frictionless and timely delivery of rule-based lending," the regulator notes.

This new platform would bring all of it together in a single place. To facilitate "frictionless" and "timely delivery" of loans, the central banking regulator had instituted a pilot project for the digitalisation of Kisan Credit Card (KCC) loans, of less than ₹1.6 lakh, in September 2022. It tested "end-to-end digitalisation of the lending process in a paperless and hassle-free manner". The pilot is currently ongoing in select districts of Madhya Pradesh, Tamil Nadu, Karnataka, Uttar Pradesh and Maharashtra. It provides for "doorstep disbursement of loans in assisted or self-service mode without any paperwork."

### What is this pilot about?

The platform is premised around the learnings from all the ongoing programmes, and further expands the scope to all types of digital loans. The public platform will be developed by its wholly owned subsidiary, the Reserve Bank Innovation Hub (RBIH). The proposed end-to-end platform will have an open architecture, open Application Programming Interfaces (API) and standards, to which all financial sector players would be able to connect seamlessly in a 'plug and play' model.

With the participation from certain banks, the platform would extend its focus also towards dairy loans, MSME loans (without collateral), personal loans and home loans. It is expected to link with services like Aadhar e-KYC, Aadhar e-signing, land records from onboarded State governments, satellite data, PAN validation, transliteration, account aggregation by account aggregators (AAs), milk pouring data from select dairy co-operatives, and house/property search data. Thus, it would cover all aspects of farming operations (essential to understand the exposure and default risk for loans of the nature) alongside those necessary for ascertaining financial profiles. Based on the



learnings from this project, the scope and coverage would be further expanded to include more information providers and lenders.

#### **What purpose does it serve?**

Experts, including the World Bank, point out that improved access to information provides the basis for fact-based and quick credit assessments. It ensures that credit is extended to a larger set of borrowers with good credit history. The borrowers too would benefit by the resulting lower cost of accessing capital, which would translate into productive investment spending. Availing formal credit may entail multiple visits to the bank alongside cumbersome documentation. This translates to higher operational costs for lenders which may also get distributed to borrowers. As per media reports, an RBI survey indicated that processing of farm loans used to take two to four weeks and cost about 6% of the loan's total value. All in all, the lending platform would bring about "reduction of costs, quicker disbursement and scalability," RBI noted.

## ON SMARTPHONE MANUFACTURING IN INDIA

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

Over the last few months, former RBI governor Raghuram Rajan and the Minister of State for Electronics Rajeev Chandrasekhar have sparred over how well a Central government scheme to boost electronics manufacturing has been faring.

#### **What happened?**

It started when Mr. Rajan, along with two other economists, released a brief discussion paper arguing that the programme isn't really pushing India towards becoming a self-sufficient manufacturing powerhouse. Instead, the government is using taxpayer money to create an ecosystem of low-level assembly jobs that will still depend heavily on imports. The junior IT Minister responded sharply, calling the paper a concoction of "half-truths" built on "shoddy comparisons".

#### **What is the PLI scheme?**

Around five years ago, the Government of India decided it wanted more companies to make things in India. Manufacturing is a key ingredient to economic growth and also comes with what economists call a multiplier effect — every job created and every rupee invested in manufacturing has a positive cascading effect on other sectors in the economy.

However, the problem was that many industries didn't want to set up shop in the country. India's infrastructure isn't great, the country's labour laws are archaic, and the workforce isn't very skilled. To solve this, the government used, and uses, a carrot-and-stick approach. The 'stick' is raising import duties, thus making it more expensive for companies to import stuff from somewhere else and sell it in India. The 'carrot' is to provide subsidies and incentives. One key set of incentives is the production-linked incentives (PLI) scheme. Here, the government gives money to foreign or domestic companies that manufacture goods here. The annual payout is based on a percentage of revenue generated for up to five years.

The industry that has shown the most enthusiasm for the scheme is smartphone manufacturing. Companies like Micromax, Samsung, and Foxconn (which makes phones for Apple) can get up to 6% of their incremental sales income through the PLI programme. And with the scheme, mobile



phone exports jumped from \$300 million in FY2018 to an astounding \$11 billion in FY23. And while India imported mobile phones worth \$3.6 billion in FY2018, it dropped to \$1.6 billion in FY23. Central government Ministers, including Mr. Chandrasekhar, have regularly cited this data as proof of the PLI's scheme's success.

#### **What is Mr. Rajan arguing?**

In his paper, the former Central bank governor argued that the export boom hides more than it reveals. Specifically, Mr. Rajan contended that while imports of fully put-together mobile phones have come down, the imports of mobile phone components — including display screens, cameras, batteries, printed circuit boards — shot up between FY21 and FY23. Incidentally, these are the same two years when mobile phone exports jumped the most. This matters because manufacturers aren't really making mobile phones in India in the traditional sense. That would involve their supply chain also moving to India and making most of the components here as well. All that the companies are doing, Mr. Rajan said, is importing all of the necessary parts and assembling them in India to create a 'Made in India' product.

This is important as low-level assembly work doesn't produce well-paying jobs and doesn't nearly have anywhere the same multiplier effect that actual manufacturing might provide.

#### **What is the Minister saying?**

Mr. Chandrasekhar's argument is two-fold. First, he said, Mr. Rajan wrongly assumed that all imports of screens, batteries, etc. are used to make mobile phones. It is possible these items are used also for computer monitors, DSLR cameras, electric vehicles etc. He also argued that not all mobile phone production in India is supported by the PLI scheme, only around 22% so far.

The Minister's overarching point is that the import dependency isn't as bad as Mr. Rajan says it is. That said, the Minister has admitted that the 'value-addition' — how much work an Indian mobile production plant is actually doing in creating the finished product — for mobile manufacturing is probably low. But he added, it will go up as the broader supply and assembly chain settles in India.

#### **Who is right?**

To his credit, Mr. Rajan accounted for this critique in his initial paper. In a reply to the Minister last week, he argued that even if only 60% of imports are used for production, India's net exports will still be negative. That is, even if only 60% of screens, batteries, etc. are used to make mobile phones, the final import tally would still beat the final export tally.

The main divide is over whether the PLI programme will be able to create long-lasting jobs and firmly establish India as a manufacturing and supply hub that adds value to the production process.

The Minister believes that it will take time for the project's results to show. On the other hand, Mr. Rajan believes that without proof of PLI's success, there is an opportunity cost. After all, every rupee spent in PLI payments is money that could have gone into improving, say, the education system, an investment that would also help the Indian economy.



## IMPLEMENTING A CAR SAFETY PROGRAMME

### The story so far:

The Ministry of Road Transport and Highways has rolled out an indigenous star-rating system for crash testing cars under which vehicles will be assigned between one to five stars indicating their safety in a collision. Called the Bharat New Car Assessment Programme (NCAP), the rating system will be voluntary and will come into effect from October 1, 2023.

### What is Bharat NCAP?

Under the Bharat NCAP, cars voluntarily nominated by automobile manufacturers will be crash tested as per protocols laid down in the soon-to-be-published Automotive Industry Standard 197. The programme is applicable to passenger vehicles with not more than eight seats in addition to the driver's seat with gross vehicle weight not exceeding 3,500 kgs. Only the base model of a particular variant will be tested.

Cars will be assigned a rating between one star to five stars after being evaluated on three parameters — adult occupant protection, child occupant protection and safety assist technologies present in the car. The first two parameters will be calculated with the help of three different kinds of tests, which include a frontal offset test where a vehicle is driven at 64 kmph and with 40% overlap into a deformable barrier which represents the oncoming vehicle, which replicates a crash between two cars of the same weight. Other tests are the side impact test at 50 kmph and the pole-side impact test (where a car is crashed into a rigid pole sideways) at 29 kmph.

Though Bharat NCAP is voluntary, in certain cases cars maybe subjected to a crash test such as for a base model of a popular variant (minimum clocked sale of 30,000 units), or when the Ministry of Road Transport and Highways recommends a model for testing based on market feedback or in the interest of public safety. Officials of the Ministry of Road Transport and Highways say that automobile manufacturers have offered a total of 30 car models for crash testing under Bharat NCAP, without revealing the name of the auto companies willing to participate.

The objective of the programme is to help consumers make an informed decision before purchasing a car, thereby spurring demand for safer cars. India sees nearly 1.5 lakh road fatalities in a year, accounting for 10% of deaths due to road crashes globally with only 1% of the world's vehicles. According to a World Bank study, road crashes are estimated to cost the Indian economy between 5 to 7% of GDP a year.

### How has Bharat NCAP evolved?

The testing protocols adopted by the Bharat NCAP are modelled on the Global NCAP, which is a project of the U.K.-based NGO, Towards Zero Foundation. It serves as a platform for co-operation among new car assessment programmes worldwide, including countries such as the U.S. which has the world's oldest crash testing regime since 1978.

The NGO launched a Safer Cars for India campaign in 2014 when it released the country's first independent crash tests covering the Suzuki-Maruti Alto 800, the Tata Nano, Ford Figo, Hyundai i10 and Volkswagen Polo. All but one of the five models failed the test at 56km/h and all scored zero stars at 64 km/h. With no airbags, the Swift also scored zero stars but a separate test of a version sold in Latin America with air bags scored three stars which demonstrated the model's potential for improvement, according to the Towards Zero Foundation.



“Since then, more than 50 results have been published for the Indian market. In 2018, Tata achieved India’s first 5-star cars and now manufacturers are competing to obtain four and five-star results and using ratings in their marketing and there has been a sharp fall in the number of zero- star models in the Indian market,” according to David Ward, Executive President, Toward Zero Foundation. The launch of the Bharat NCAP on Tuesday is on the back of a slew of road safety regulations over the past few years including mandatory dual front airbags, anti-lock braking system, seatbelt reminder and reverse parking sensors.

#### **What is the way forward?**

India will need to develop its crash testing capabilities and knowledge expertise for the Bharat NCAP programme to be implemented meaningfully, such as a software system wired to the dummies placed inside cars to assess the nature and extent of injuries to analyse scores. Over the years, India will also have to align Bharat NCAP with global standards by expanding testing parameters. For example, the U.S. NCAP also includes a roll-over test which tests whether a vehicle is vulnerable to tipping up on the road in a severe manoeuvre. Japan’s NCAP covers electric shock protection performance after a collision, performance of neck injury protection in a rear end collision, passenger seat belt reminder evaluation, evaluation of pedestrian protection technologies apart from preventive safety performance such as autonomous emergency braking system, lane departure prevention system, rear-view monitoring system and pedal misapplication, among others.

### **GOVT UNVEILS GREEN HYDROGEN STANDARDS, SETS EMISSION THRESHOLDS FOR PRODUCTION**

The mission has an outlay of Rs 19,744 crore up to 2029-30. The Strategic Interventions for Green Hydrogen Transition (SIGHT) programme is a major financial measure under the mission with an outlay of Rs 17,490 crore.

The ministry of New and Renewable Energy on Saturday notified the green hydrogen standard for India, outlining the emission thresholds for production of hydrogen that can be classified as ‘green’. India became one of the few countries to have a definition for green hydrogen.

“After discussions with multiple stakeholders, the ministry has decided to define green hydrogen as having a well-to-gate emission of not more than two kg carbon dioxide (CO<sub>2</sub>) equivalent per kg hydrogen (H<sub>2</sub>),” the ministry said in a statement.

The well-to-gate emission includes water treatment, electrolysis, gas purification, drying and compression of hydrogen. The scope of the definition encompasses both electrolysis-based and biomass-based hydrogen production methods.

The notification specifies that a detailed methodology for measurement, reporting, monitoring, on-site verification and certification of green hydrogen and its derivatives will be specified by the ministry of new and renewable energy.

The notification also specifies that the Bureau of Energy Efficiency (BEE) under the ministry of power will be the nodal authority for accreditation of agencies for the monitoring, verification and certification for green hydrogen production projects.



The government launched National Green Hydrogen Mission early this year with an aim to produce 5 million metric tonne (MMT) green hydrogen per annum with an associated renewable energy capacity of about 125 giga watt (GW) by 2030.

The mission has an outlay of Rs 19,744 crore up to 2029-30. The Strategic Interventions for Green Hydrogen Transition (SIGHT) programme is a major financial measure under the mission with an outlay of Rs 17,490 crore.

The programme proposes two distinct financial incentive mechanisms to support domestic production of electrolysers and production of green hydrogen. These incentives are aimed at enabling rapid scale-up, technology development and cost reduction.

The definition of green hydrogen brings a lot of clarity to the mission of making India a global green hydrogen hub.

### EXPLAINSPEAKING: HOW INDIA IS BECOMING A YOUNG COUNTRY BUT WITH AN AGEING WORKFORCE

An analysis of India's workforce, sourced from CMIE's Economic Outlook data, shows that while India may be the country with the most youthful population, its workforce is rapidly ageing. In other words, the young are increasingly getting driven out of the job market.

While addressing the nation on Independence Day, Prime Minister Modi made a special mention to India being a youthful nation and highlighted the opportunities that lay before India's youth.

He said: "Today, while the countries around the world are witnessing an age structure that is growing old, India is moving energetically towards its youthful age structure. It is a period of great pride because today India has the highest population under the age of 30. This is what we have in my country, the youth below the age of 30 years; my country has crores of hands, crores of brains, crores of dreams, crores of resolutions! So, my brothers and sisters, my family members, we can get the desired results."

A little later in the speech he also said: "Today I would like to tell the youth of my country, to the sons and daughters of my country, you are fortunate. People hardly get the kind of opportunity that our youngsters are getting now, and so we don't want to lose it. I have utmost faith in our youth power. There is huge potential/capability in our youth power and our policies as well as our ways provide an enabling environment to strengthen it."

However, an analysis of India's workforce, sourced from CMIE's Economic Outlook data, shows that while India may be the country with the most youthful population, its workforce is rapidly ageing. In other words, the young are increasingly getting driven out of the job market.

#### **India's workforce is ageing: What does it mean?**

An ageing workforce basically means that if one looks at all the employed people in India, the share of young people is going down while the share of those closer to 60 years of age is going up.

In CMIE's data, youth is defined as those belonging to ages above 15 years and below 25 years. However, since the PM has talked about those under 30 years as the youth, we have divided the workforce into three groups:



- 1> Those aged 15 years or more but less than 30 years,
- 2> Those aged 30 years or more but less than 45 years, and
- 3> Those aged 45 years and older.

The share of India's youth (as defined by PM Modi) has fallen from 25% in 2016-17 to just 17% at the end of the last financial year in March. Even the share of those in the middle group has fallen from 38% to 33% over the same period.

The oldest age category however has grown its share from 37% to 49%.

In other words, just in the past seven years, the workforce has aged so much that the share of people 45 years and older has gone from one-third to almost one-half.

While the total number of people with jobs has fallen from 41.27 crore to 40.58 crore, the biggest decline has happened in the involvement of India's youth.

In 2016-17, there were 10.34 crore people under the age of 30 years in the workforce. By the end of 2022-23, this number had fallen by over 3 crores to just 7.1 crore.

At the same time, those aged 45 and above grew in numbers even though the overall employment levels fell.

#### **Why is India's workforce ageing?**

Simply put, even though its numbers are swelling up, the youth is getting driven out of the job market.

A good way to track this is to look at the metric called "Employment Rate". The Employment Rate (ER) for any population or age group tells us what proportion of that age group or population is employed. So, if there are 100 people in the ages 15 to 29 and only 10 are employed then the ER would be 10%.

The population belonging to the youth category described by PM Modi grew in size from 35.49 crore in 2016-17 to 38.13 crore in 2022-23. Yet the total number of people in this age group that had a job shows a secular decline. So while this "young" population grew by 2.64 crore, the number of employed youth fell by 3.24 crore. In other words, far from keeping pace, the youth of India actually experienced a fall in employment of a whopping 31% in the past seven years.

This is reflected in the sharp fall in the Employment Rate for this age-group. It fell from 29% to just 19%. In other words, while seven years ago, 29 of every 100 youth (15 to 30 ages) used to have a job, today that number has fallen to 19 out of every 100.

The employment rate has also fallen for the next age category as well, albeit to a lesser extent. Moreover, the employment rates in this age group were much higher to begin with.

The employment rates have declined the least for the oldest age group. Moreover, it is noteworthy that this is the only age group where the absolute number of people with jobs has actually grown. It is another matter that the overall population of this cohort grew by even more and that is why the ER has fallen to some extent.





Among the 45 years and above category, the age group of 55-59 years is the one that stands out. Not only is this cohort one of those rare ones that saw an increase in employment rate but is also the one which has registered the maximum increase in the ER over the past 7 years.

Lastly, if one considers cohorts of 5 years, then the age group of 25 to 29 years shows a rising employment rate over the past 7 years. But a look at the absolute numbers explains that the reason for this rise in ER is not that more people in this age group got a job, rather a sharp fall in the total population of this cohort. It is for this very reason that despite a better ER, this cohort is not able to pull up the numbers for the youth (15 to 29 years) category.

#### **Upshot**

The data clearly shows that even though India has a fast-growing youth population, that by itself does not guarantee more jobs for the youth. In fact, India's workforce is rapidly ageing. That's because the young are failing to make their mark in the job market and it appears they are increasingly getting elbowed out by the not-so-young Indians.

Even if one accounts for the possibility that a lot of young people may be pursuing higher studies, the trend is still stark enough to merit a look by policymakers.

Moreover, even if one moves away from the CMIE database and looks at other so-called official surveys, there is evidence to suggest that in India's unemployment is highest for the youth, and often rises with educational attainment.

Unless these trends are reversed, India may continue to experience the rather counterintuitive phenomenon of being a youthful country with an ageing workforce.



# DreamIAS



## LIFE & SCIENCE

### WHY IS JAPAN RELEASING FUKUSHIMA WATER — AND IS IT SAFE?

Japan started to pump treated radioactive water from the Fukushima Daiichi nuclear power plant, destroyed in a 2011 earthquake and tsunami, into the Pacific Ocean on Thursday.

In response, China announced it is suspending Japanese seafood imports with immediate effect. South Korea's largest opposition party has amped up protests.

#### **Why is the water being released?**

Several reactors at the nuclear power plant melted down after the 2011 earthquake and tsunami. Since then, workers at the now-defunct plant have been cooling the reactors by using water, which becomes contaminated. All the radioactive water, about 350 million gallons, is stored in more than 1,000 storage tanks at the site. But the tanks are nearing capacity, leading the workers to release water into the ocean after filtering it.

#### **How is the water being filtered?**

Tokyo Electric Power Company Holdings (TEPCO), operator of the nuclear plant, is using a filtration system called the Advanced Liquid Processing System (ALPS). The system can remove all radioactive contaminants from the water except tritium. Tritium is a form of hydrogen that occurs naturally in the Earth's atmosphere, and is part of water itself. So it isn't possible to create a filter to separate it from the contaminated water.

To tackle the situation, TEPCO has said it will dilute the contaminated water using seawater to ensure that the concentration levels of tritium are well below the safety standards. If the levels of tritium remain too high after filtration, it will repeat the process before releasing the water. Moreover, the water will be discharged slowly, over decades.

#### **Is the released water safe?**

The issue has polarised experts. Japan and the International Atomic Energy Agency (IAEA), which has peer-reviewed the country's water release plan, have said "discharges of the treated water would have a negligible radiological impact to people and the environment".

The Japanese government also says tritium isn't dangerous — and even if it enters into the body, the risks are low.

Many experts, however, have accused officials of downplaying the level of radiation in the water. Many also allege that apart from tritium, there are other radioactive elements that remain in the water even after filtering.

"The contaminated water contains many radionuclides, which we know impact the environment and human health — including strontium-90," Shaun Burnie, senior nuclear specialist for Greenpeace, told DW.



## WHAT ARE THE CONCERNS ABOUT DRILLING IN THE NORTH SEA?

### The story so far:

U.K. Prime Minister Rishi Sunak recently backed plans for new fossil fuel drilling off Britain's coast, worrying environment experts even as the world continues its stride towards irreversible climate change. According to an official statement released on July 31, the move will help Britain become more energy independent. The North Sea Transition Authority (NTSA), responsible for regulating oil, gas and carbon storage industries, expects the first of the new licences to be awarded in autumn, with the round expected to award over 100 licences in total.

### What is the history of drilling there?

Geographically, the North Sea lies between England and Scotland on its west, the Netherlands, Belgium, and France on its south, and Norway, Denmark, and Germany on its east.

The 1958 Geneva Convention on the Continental Shelf was the first international legislation to establish the rights of countries over the continental shelves adjacent to their coastlines and paved the way for exploration in the North Sea. The treaty came into force in 1964, shortly after the U.K. Parliament passed the Continental Shelf Act in April of the same year. The Act provides for exploration and exploitation of the continental shelf based on the 1958 convention. It delineated the jurisdiction the U.K. had over oil and gas resources under the seabed near its shores.

The first licence for exploration in the U.K. North Sea was awarded to British Petroleum (BP) in September 1964. The following year, BP discovered natural gas in the North Sea, off the east Anglian coast. In 1970, BP made its first discovery of commercial oil in the large Forties Field east of Aberdeen, Scotland. In the next 15 years, BP started more than 15 fields in the U.K. North Sea (and four in the Norwegian North Sea). More British, European, and U.S. companies continued their exploration of the North Sea, and by the 1980s, there were over a hundred installations looking for oil and gas.

The production from the North Sea peaked in 1999, when it produced 1,37,099 thousand tonnes of crude oil and natural gas liquids. By 2022, the total production declined to 38,037 thousand tonnes, according to official figures.

### Why is offshore drilling problematic?

According to the U.S.-based advocacy group Natural Resources Defence Council (NRDC), offshore drilling puts "workers, waters, and wildlife" at risk. Drilling in seas and oceans for fossil fuels not only aggravates the threat of climate change but also warms oceans and raises sea levels. Offshore drilling is associated with a direct risk to marine biodiversity, as well as with indirect risks to coral reefs, shellfish and the marine ecosystem from acidic waters because of carbon pollution settling into oceans.

### What about climate commitments?

In its March 2023 Progress Report to the U.K. Parliament, the Climate Change Committee (CCC) which advises the U.K. and devolved governments on emissions targets, said that the U.K. has not adequately prepared for climate change under the second National Adaptation Programme. In the U.K., National Adaptation Programmes are statutory programmes that the government must



follow to help prepare the country for climate change, as required under the Climate Change Act. The second National Adaptation Programme covered the period from 2018-2023.

As per the CCC's report, there is "very limited evidence" of the implementation of adaptation at the scale needed to fully prepare for climate risk. According to the Climate Action Tracker, U.K.'s climate action is not consistent with the Paris Agreement. Although its overall rating is "almost sufficient", U.K.'s Nationally Determined Contributions (NDCs) and long-term targets do not represent a fair share of the global effort to address climate change. Licensing new oil and gas extraction plans is incompatible with the 1.5°C limit in the rise in temperature, as per the Climate Action Tracker website.

## INDIA AND THE NORTHERN SEA ROUTE

### The story so far:

Murmansk, popularly called the capital of the Arctic region and the beginning point of the Northern Sea Route (NSR), is witnessing the rising trend of Indian involvement in cargo traffic. In the first seven months of 2023, India got the lion's share with 35% of eight million tonnes of cargo handled by the Murmansk port, which is about 2,000 km northwest of Moscow. India has been showing greater interest regarding the NSR for a variety of reasons.

### Why is the Arctic region significant to India?

The vulnerability of the Arctic region, which is above the Arctic Circle and includes the Arctic Ocean with the North Pole at its centre, to unprecedented changes in the climate may have an impact on India in terms of economic security, water security and sustainability.

The region also constitutes the largest unexplored prospective area for hydrocarbons remaining on the Earth. Shyam Saran, former Foreign Secretary, in an article in 'The Hindu' published in February 2012, states that "it is estimated that the region may hold over 40 per cent of the current global reserves of oil and gas. There may also be significant reserves of coal, zinc and silver." However, the government's Arctic Policy of 2022 mentions that the country's approach to economic development of the region is guided by UN Sustainable Development Goals.

### How old is India's engagement with the Arctic?

India's engagement with the Arctic can be traced to the signing of the Svalbard Treaty in February 1920 in Paris and India is undertaking several scientific studies and research in the Arctic region. This encompasses atmospheric, biological, marine, hydrological and glaciological studies. Apart from setting up a research station, Himadri, at Ny-Ålesund, Svalbard, in 2008, the country launched its inaugural multi-sensor moored observatory and northernmost atmospheric laboratory in 2014 and 2016 respectively. Till last year, thirteen expeditions to the Arctic were successfully conducted. In May 2013, India became an observer-State of the Arctic Council along with five others including China.

### What is NSR?

The Northern Sea Route (NSR), the shortest shipping route for freight transportation between Europe and countries of the Asia-Pacific region, straddles four seas of the Arctic Ocean. Running to 5,600 km, the route begins at the boundary between the Barents and the Kara seas (Kara Strait) and ends in the Bering Strait (Provideniya Bay).



A paper published on the website of the Arctic Institute in September 2011 states that “in theory, distance savings along the NSR can be as high as 50% compared to the currently used shipping lanes via Suez or Panama.” The 2021 blockage of the Suez Canal, which forms part of the widely-used maritime route involving Europe and Asia, has led to greater attention on the NSR.

#### **How is Russia making the NSR navigable?**

As the seas of the Arctic Ocean remain icebound during most of the year, the icebreaking assistance is organised to ensure safe navigation along the NSR. Russia is the only country in the world with a nuclear-powered icebreaker fleet, according to Rosatom State Nuclear Energy Corporation, the NSR infrastructure operator. In December 1959, the world’s first nuclear icebreaker, “Lenin,” was put into operation, unveiling the new chapter in the NSR development. It was decommissioned 30 years later.

Today, FSUE Atomflot, a subsidiary of Rosatom, acts as the fleet operator of nuclear-powered icebreakers. The fleet comprises seven nuclear-powered icebreakers, apart from one nuclear container ship. Three more are expected to be commissioned between 2024 and 2027.

#### **What are the driving factors for India to participate in the NSR development ?**

Primarily, the growth in cargo traffic along the NSR is on the constant rise and during 2018-2022, the growth rate was around 73%. Last year, the volume of cargo traffic was 34.117 million tonnes. With India increasingly importing crude oil and coal from Russia in recent years, Rosatom says that “the record supplies of energy resources for the Indian economy are possible due to such a reliable and safe transport artery as the NSR.”

Secondly, the NSR assumes importance, given India’s geographical position and the major share of its trade associated with sea transportation.

Thirdly, the Chennai-Vladivostok Maritime Corridor (CVMC) project, an outcome of signing of the memorandum of intent between the two countries in September 2019, is being examined as one linking with another organise international container transit through the NSR. The 10,500 km-long CVMC, passing through the Sea of Japan, the South China Sea and Malacca Strait, will bring down transport time to 12 days, almost a third of what is taken under the existing St. Petersburg-Mumbai route of 16,000 km, according to the Union Minister for Ports, Shipping and Waterways Sarbananda Sonowal, who was quoted as saying in The Hindu Businessline in June 2023. A study commissioned by Chennai Port Trust reveals that coking coal [used by steel companies], crude oil, Liquefied Natural Gas (LNG) and fertilizers are some of the cargo that can be imported from Russia to India through CVMC.

Fourthly, experts are discussing the possibility of China and Russia gaining collective influence over the NSR.

#### **What lies forward?**

The NSR development plan until 2035, as approved by the Russian government last year, sets the cargo traffic target as 80 million tonnes and 150 million tonnes for 2024 and 2030. The plan approval took place amid economic sanctions imposed by the West against Russia.

In March, a Russian delegation held meetings with the Indian business community in New Delhi and Mumbai on the NSR development, according to media reports. The delegation had promised



to provide the availability of key components for the year-round operation of the route. Rosatom seeks the participation of Indian companies in projects related to the NSR.

As for the CVMC project, a workshop, featuring stakeholders from the two countries, is expected to be held in the second half of October, says a senior official .

## ECUADORIANS REJECT OIL DRILLING IN THE AMAZON IN HISTORIC DECISION

In a historic decision, Ecuadorians voted on Sunday against the oil drilling of a protected area in the Amazon that's home to two uncontacted tribes and serves as a biodiversity hotspot.

With over 90% of the ballots counted by early Monday, around six in ten Ecuadorians rejected the oil exploration in Block 44, situated within Yasuni National Park, one of the world's most biodiverse regions. The area is inhabited by the Tagaeri and Taromenani, who live in self-isolation.

In 1989, Yasuni was designated a world biosphere reserve by the United Nations Educational, Scientific and Cultural Organization, also known as UNESCO. Encompassing a surface area of over 1 million hectares, it boasts 610 species of birds, 139 species of amphibians, and 121 species of reptiles. At least three species are endemic.

The outcome represents a significant blow to Ecuadorian President Guillermo Lasso, who advocated for oil drilling, asserting that its revenues are crucial to the country's economy. As a result of the vote, state oil company Petroecuador will be required to dismantle its operations in the coming months.

### Political turmoil

The referendum took place alongside the presidential election. The country is experiencing political turmoil following the assassination of one of the candidates, Fernando Villavicencio.

## WHAT MAKES HURRICANE HILARY 'UNPRECEDENTED'

The United States sees its fair share of hurricanes. As per the country's National Weather Service (NWS), in an average 3-year period, roughly five hurricanes strike the US coastline – but never in the west coast.

This is why Hurricane Hilary, which is currently racing towards Southern California and Mexico, is so out of the ordinary. Though California, in the past, has felt the effects of hurricanes, they typically remain well offshore and subside to become tropical storms by the time they hit they make landfall.

And even these tropical storms are rare. Last year's Hurricane Kay was the first tropical storm to impact California in a quarter of a century, and it lost most of its force by the time it hit the coast. Prior to that, Hurricane Nora moved over Southern California as a tropical storm in 1997.

As per a 2004 report by the American Meteorological Society, the only tropical storm with hurricane-force winds believed to have hit Southern California came in October 1858, with San Diego bearing its brunt.

"It is rare — indeed nearly unprecedented in the modern record — to have a tropical system like this move through Southern California," Greg Postel, a hurricane and storm specialist at the Weather Channel, told CBS News.



### **A race to be ready**

Unlike states like Florida, Louisiana and Texas on the Gulf of Mexico, which have learnt over the years on how to survive hurricanes, for Californians and Mexicans in the west, it is a novel, terrifying, experience.

As per latest estimates, the hurricane will make landfall in the Baja peninsula in Mexico, roughly 330 km south of the port of Ensenada. It will move north from there, bringing record rainfall and extremely strong winds.

Tijuana, a sprawling border metropolis of 1.9 million people in Mexico, is at risk of landslides and flooding, because of its hilly terrain, extremely high density of population and poor quality of housing and infrastructure. Mexico has mobilised over 18,000 troops in anticipation of the storm.

Even if Hurricane Hilary loses some of its force by the time it touches Southern California, its impact may be deadly. "Two to three inches of rainfall in Southern California is unheard of" for this time of year, Kristen Corbosiero, a University of Albany atmospheric scientist who specialises in Pacific hurricanes, told AP. "That's a whole summer and fall amount of rain coming in probably six to 12 hours."

### **Why this is so rare**

The primary reason why the Pacific coast seldom sees such tropical storms and hurricanes is the nature of the ocean itself. As per NWS, the first condition for the formation of hurricanes is that ocean waters must be above 26 degrees Celsius. Below this threshold temperature, hurricanes will not form or will weaken rapidly once they move over water below this threshold.

While high temperatures are common during hurricane season along the US east coast, the west coast is much colder. In the Atlantic, warm, equatorial waters are transported north to higher latitudes along the US coast via the Gulf Stream but along the west coast, in the Pacific, cold current steers colder water from higher latitudes toward equatorial regions. This makes hurricanes highly unlikely.

Another factor is the vertical wind shear — a term used to describe the change in wind speed as one travels up from the Earth's surface — especially in the upper level of the atmosphere. It is an important ingredient in formation of hurricanes as they can extend up to 16 km into the atmosphere. Hurricanes can't emerge if the upper level winds are strong as they "destroy the storms structure by displacing the warm temperatures above the eye and limiting the vertical ascent of air parcels," according to the NWS. Usually, wind shear in the eastern Pacific is much stronger than the Gulf of Mexico, causing less frequent hurricanes along the western coast.

Lastly, the rarity of west coast hurricanes is the influence of wind steering patterns. Trade winds play a crucial role in directing hurricanes towards the east coast. The same winds divert them away from the west coast. Hurricanes originating in the eastern Pacific, often near the central Mexico coastline, generally follow a west-northwest trajectory that take them away from the coast. "Almost all of them just go out to sea. That's why we never hear about them," Kerry Emanuel, a hurricane professor at Massachusetts Institute of Technology, told AP.

### **So, is climate change the culprit?**

Simply put, the answer is yes. Scientists expected climate change to not only spike the occurrence of such hurricanes, but also make them more intense. A recent study, "Tropical Cyclones and



Climate Change: Global Landfall Frequency Projections Derived from Knutson et al', published in the journal American Meteorological Society, suggested that major hurricane landfalls in the eastern Pacific could become up to 30 per cent more frequent in case global temperatures soar by at least 2 degrees Celsius.

But why does climate change lead to more frequent and intense hurricanes? As mentioned before, it has to do with the surface temperatures of the oceans. The oceans are known to have absorbed 90 per cent of the additional heat generated by the greenhouse gas emissions in recent years. Due to this, global mean sea surface temperature has gone up by close to 0.9 degree Celsius since 1850 and around 0.6 degree Celsius over the last four decades.

Higher sea surface temperatures cause marine heat waves, an extreme weather event, which can also make storms like hurricanes and tropical cyclones more intense. Warmer temperatures escalate the rate of evaporation along with the transfer of heat from the oceans to the air. When storms travel across hot oceans, they gather more water vapour and heat. This results in stronger winds, heavier rainfall and more flooding when storms reach the land.

The situation has been worsened by the El Nino, developing for the first time in seven years, which has weakened the vertical wind shear in the eastern Pacific, allowing more hurricanes in the region. El Nino is a weather pattern that refers to an abnormal warming of surface waters in the equatorial Pacific Ocean. It is known to increase the likelihood of breaking temperature records and triggering more extreme heat in many parts of the world and in the ocean.

#### ELON MUSK SAYS X WILL STRIP ABILITY TO BLOCK ACCOUNTS

Social media company X, formerly known as Twitter, will remove a protective feature that lets users block other accounts, owner Elon Musk said on Friday in another controversial move for the company he bought last year.

The block function on X allows a user to restrict specific accounts from contacting them, seeing their posts or following them. "Block is going to be deleted as a 'feature', except for DMs," Musk said in a post on the platform, referring to direct messages. He said X would retain the mute function, which screens a user from seeing specified accounts but, unlike blocking, does not alert the other account to the action.

The billionaire owner has described himself as a free speech absolutist, but some critics have said his approach is irresponsible. Researchers have found an increase in hate speech and antisemitic content on the platform since he took over, and some governments have accused the company of not doing enough to moderate its content.

Removing or limiting the block feature might bring X into conflict with guidelines incorporated by Apple's App Store and Alphabet's Google Play. Apple says apps with user-generated content must have the ability to block abusive users. Google Play Store says apps must provide an in-app system for blocking user-generated content and users.

X, Google and Apple did not immediately reply to requests for comment. Responding to a post from anti-bullying activist Monica Lewinsky urging X to keep the "critical tool to keep people safe online", Chief Executive Linda Yaccarino defended Musk's move.

"Our users' safety on X is our number one priority. And we're building something better than the current state of block and mute. Please keep the feedback coming," Yaccarino posted.





## HOW AI IS USED TO INCREASE THE FREQUENCY OF ACOUSTIC SIDE CHANNEL ATTACKS

### The story so far:

In August, a research paper titled “A Practical Deep Learning-Based Acoustic Side Channel Attack on Keyboards”, published and supported by the ethics committee of Durham University, U.K., revealed that Artificial Intelligence (AI) can be used to decode passwords by analysing the sound produced by keystrokes. The study highlighted the accuracy of Acoustic Side Channel Attacks (ASCA) when state-of-the-art deep learning models were used to classify laptop keystrokes and their mitigation. While ASCA is not new, the development of AI and deep learning has increased the risks posed by side channel attacks.

### What are ASCA?

To understand Acoustic Side Channel Attacks, one should know Side Channel Attacks (SCAs). SCAs are a method of hacking a cryptographic algorithm based on the analysis of auxiliary systems used in the encryption method. These can be performed using a collection of signals emitted by devices, including electromagnetic waves, power consumption, mobile sensors as well as sound from keyboards and printers to target devices. Once collected, these signals are used to interpret signals that can be then used to compromise the security of a device.

In an ASCA, the sound of clicks generated by a keyboard is used to analyse keystrokes and interpret what is being typed to leak sensitive information. These attacks are particularly dangerous as the acoustic sounds from a keyboard are not only readily available but also because their misuse is underestimated by users. While most users hide their screens when typing sensitive information, no precautionary steps are taken to hide the sound of the keystrokes. And though over time, the sound of keyboard clicks has become less profound with devices making use of non-mechanical keyboards, the technology with which the acoustics can be accessed and processed has also improved drastically.

Additionally, the use of laptops has increased the scope of ASCAs as laptop models have the same keyboard making it easier for AI-enabled deep learning models to pick up and interpret the acoustics.

### How accurate are Acoustic Side Channel Attacks?

The research conducted by a group of scientists from Cornell University, Durham University, University of Surrey, and the Royal Holloway University of London investigated the use of audio recordings taken from Zoom video conferencing calls, smartphone microphones, and off-the-shelf equipment and algorithms to launch ASCA attacks. The study found that when trained on keystrokes by a nearby phone, the classifier achieved an accuracy of 95%, the highest accuracy seen without the use of a language model.

When a deep learning model was trained on the data with default values, the model was able to acquire a meaningful interpretation of the data. On a MacBook Pro, which features a keyboard identical in switch design to Apple’s models from the last two years, the model was able to achieve state-of-the-art accuracy with minimal training data.

Additionally, when the AI model was made to recognise keystrokes using audio captured through a smartphone microphone, it was able to achieve 95% accuracy. However, accuracy dropped to 93% when Zoom calls were used.



### Are such attacks new?

ASCA attacks are not new and have been around since 1950 when acoustic emanations of encryption devices were used to crack their security. Additionally, the United States National Security Agency (NSA) declassified documents listed acoustic emanations as a source of compromise in 1982. Over the past decades, researchers have published papers talking about the threats from ASCA attacks with the advent of modern technology that brought more microphones in close proximity to keyboards, making it easier to collect and interpret acoustic data.

However, with the increasing use of AI and the accuracy with which deep learning models can recognise and analyse keystrokes, the threat from ASCA has resurfaced. Especially since users may not take ample precautions while typing in sensitive information including banking data and password on their laptops in public spaces like coffee shops, airports, and cafes.

### How can users protect against ASCAs?

While there is no explicit means of defence against ASCAs, simple changes to typing could reduce the chances of attacks. Using touch-based typing can also reduce the chances of successful keystroke recognition from 64% to 40%, making it more difficult for threat actors to leak sensitive information.

Additionally, changes in typing style and creating stronger passwords that use a combination of upper- and lower-case alphabets can make it more difficult for criminals to launch successful ASCA attacks; the study found that even deep learning models had a difficult time recognising the use of shift key to change the case of alphabets when typing. Users should also avoid the use of easily recognisable phrases which can make it easier for AI models to predict the text.

## THE WORLD OF SUGAR

This is the title of a recent book by Dr. Ulbe Bosma, (Harvard University Press, covered by Nature Briefing of August 4, 2023). The book talks about sugar's societal dominance as a recent development. Granulated sugar was made and eaten from the sixth Century in India.

### Tale of exploitation

Indeed, Dr. K.T. Achaya, in his book "Indian Food — a historical companion" points out that sugarcane was known in India since the times of the Atharva Veda (around 900 BC) and rock sugar (Guda or Gud in Hindi) since 800 BC. Though granulated sugar was known since the sixth century, refined sugar became widely available in Europe only in the 19th Century. As the author points out, sugar's societal dominance is a story of progress and a bitter-sweet tale of exploitation, racism, obesity and environmental destruction.

### Slave trade

The article "A history of sugar — the food that nobody needs, but everyone craves for" (The Conversation) discusses how sugar was produced in the Middle East, and during the colonial times by slaves in the West Indies, and in Brazil.

There was a huge demand for labour to cultivate the massive sugar plantations in Brazil and the Caribbean.



This need was met by transatlantic slave trade, which resulted in around 12,570,000 human beings being shipped from Africa to the Americas between 1501 and 1867. Mortality rates could reach up to 25% on each voyage, and between one million and two million dead must have been thrown overboard. Thankfully, slave trade has since been abolished. Brazil and India remain top producers, but now nearly 30% of global sugar is made from sugar beet.

### **Sugar v/s Sugarcane**

In India, we are all familiar with sugarcane, coarse and crystal sugar. We also have jaggery, also known as gud in Hindi, which is thought to be good for health. Today, people ask whether it is better to have freshly prepared sugarcane juice, sold by vendors, than crystal sugar bought in packed bags.

The answer is yes, since it contains trace amounts of antioxidants and minerals that are lost during the refinement to sugar. The evaporation product of sugarcane juice, jaggery, is often touted as being “healthier” than other forms of sugar, since it has antioxidants, vitamins and minerals.

But we all know that too much of any form of sugar is bad for health. It can lead to diabetes, where excess sugar intake triggers the release of insulin in the bloodstream which can lead to vision loss, and diseases in the heart and kidney. This is why doctors suggest restrictions in the amount of sugars taken in.

### **Health hazards**

Type 1 diabetics have to inject insulin in their blood, while type 2 diabetics have to carefully manage their blood glucose, and use substitutes like steviol glycoside or sucralose. A recent company called Gene Clinic has come out with a device which sticks to your arm or abdomen just like a bandage, which you wear continuously. It tells you your glucose content, and when you have to consult your doctor, if needed.

Given all this, it is best to reduce the amount of sugar/sweets we consume. Best for our health

## **ARE TURMERIC SUPPLEMENTS ADVISABLE?**

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

Australia’s Therapeutic Goods Administration (TGA), the country’s regulator of medicines, medical devices and biologicals, issued a medical advisory last week warning Australians of the risk of liver injury from using medicines and herbal supplements containing turmeric or its active ingredient, curcumin.

### **Why was this advisory issued?**

The TGA said that until June 29, 2023, it had received 18 reports of liver problems experienced by consumers taking products containing curcuma longa (turmeric) and/or curcumin. These followed an investigation the agency undertook to review the safety of the products, after instances of their consumption and liver injury were reported in Australia and internationally. The evidence from nine of these reports had enough information to suggest that a liver injury may have been caused by curcuma longa or a curcumin product. Two of these cases were severe, including one that resulted in death. In four of the nine cases, there were no other ingredients likely to have contributed to the liver injury. The other five cases involved products that contained other ingredients that may have contributed to the liver injury, the advisory noted.

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



The TGA's verdict, following the investigation, is that there is a "rare risk" of liver injury from taking curcuma longa and/or curcumin in medicinal dosage forms. People with existing or previous liver problems were more likely to develop this rare adverse event. There are over 600 listed medicines, legally available in Australia, that contain these curcuma species and/or curcumin, according to the advisory.

#### **Does turmeric have health benefits?**

The TGA warning says that the risk of liver injury did not appear to relate to curcuma longa consumed in "typical" dietary amounts as a food. As a staple ingredient in South and South East Asian cuisine, turmeric is also used in Ayurvedic and Chinese-medicine concoctions. Several studies, over the last five decades, have investigated the properties of curcumin and report it to have anti-oxidant properties that can help with inflammation. These include arthritis and infections. Research teams at the Indian Institute of Science, Bengaluru have reported that curcumin used along with the drug Artemisinin was effective in treating malaria when tested on mice. There have also been studies investigating the drug as an adjuvant in chemotherapy based on results in mice and animal studies. However, their effect in human trials have been inconclusive.

#### **Why is curcumin being used in supplements?**

One of the challenges of turmeric and by extension curcumin is that very little of it is absorbed, or made 'bioavailable', by the body. Much scientific effort has been expended over the decades to improve its bioavailability. A popular approach is to use piperine, the major active component of black pepper, which improves bioavailability by 2000%, says a 2017 review in the peer-reviewed journal Foods. However, whether increasing the bioavailability of curcumin and packaging them in supplements makes them effective and safe for use in medicines is still being debated with no conclusive evidence emerging from trials.

#### **Is Australia the only country to warn about turmeric supplements?**

The Australian TGA cites reports of 20 hepatitis cases in France and an investigation by ANSES, the French Agency for Food, Environmental and Occupational Health & Safety, into 100 reports of adverse effects, including 15 reports of hepatitis, potentially related to the consumption of food supplements containing turmeric or curcumin. The ANSES report underlines that turmeric has "choleretic" properties, which means it stimulates the secretion of bile to improve digestion, and therefore, it is advisable that those with bile duct disease should avoid turmeric. Curcumin could also interact with medications such as anticoagulants, cancer drugs and immunosuppressants, reducing their safety and effectiveness, they note.

#### **Is there a 'safe limit' on the amount of turmeric that can be consumed?**

The European Food Safety Authority has set an acceptable daily intake of 180 mg of curcumin per day for a 60 kg adult as the safe level of consumption. A World Health Organization/Food and Agricultural Organisation advisory recommends 3 mg/kg of body weight. India's Food Safety and Standards Authority of India has standards that packaged turmeric must comply with but nothing on the recommended dietary allowance.



## THE STORY OF HOW THE DEADLIEST VIRUS TO HUMANS WAS REVIVED

In August 1997, the members of the village council of a small settlement in Alaska, called Brevig Mission, were faced with a peculiar request. A man named Johan Hultin wanted their permission to exhume a nearly 80-year-old mass grave. He claimed that he had done it before, 46 years earlier, and that he was back because his previous mission had failed.

The council gave him its blessing when its members heard what he was after. According to him, hidden beneath the frozen ground lay preserved the recipe to make the deadliest virus humankind had ever encountered.

### A virus from scratch

Scientists routinely engineer new viruses in the laboratory. They make changes to the genetic material (DNA or RNA) of existing viruses to create new variants that may or may not exist naturally. Doing so allows scientists to compare the properties of the edited variants to their natural counterparts and infer the role of the changes that they made.

For example, if they observe that some patients have a higher viral load in their blood for a given disease, and a particular mutation is observed in the DNA of viruses isolated from those patients, they can introduce that mutation into the DNA of viruses that don't naturally harbour it, to see if it improves the viral output in the laboratory.

But while scientists can easily introduce changes to the genetic material of a virus, they can't create a virus from scratch. They have to rely on nature to do this.

So, scientists take samples from patients, make more copies of the genetic material using a technique called a polymerase chain reaction, and use it to understand the sequence of bases that make up its genetic material. Once they have the sequence, they can tweak it.

### Meet H and N

In 1995, molecular pathologist Jeffery Taubenberger, who was working on the influenza virus, was trying to understand why some strains of the virus caused pandemics while others did not. Taubenberger realised that in order to do that, he needed to know the genetic makeup of the deadliest strain of influenza that had ever infected humans: the virus responsible for the 1918 disaster.

At the time, 105 years ago today, the virus was estimated to have infected 500 million people – a third of the world's population then. It was notorious for its ability to cause severe disease in people aged 15-34. It has been estimated that 50 million people died as a result. (To compare, the COVID-19 pandemic is thought to have caused around 6.9 million deaths.)

Researchers designate influenza strains using the types of two genes that the virus contains, named haemagglutinin and neuraminidase, designated 'H' and 'N'. There are 18 subtypes of haemagglutinin, labelled H1-H18, and 11 types of neuraminidase, N1-N11, in nature. An influenza virus contains one of each and is classified accordingly.

For example, the 1918 epidemic was caused by the H1N1 variant; the 1957 Asian flu was caused by H2N2; and the 1968 Hong Kong flu was caused by H3N2. There exist further sub-variations of these primary classifications, where different mutations exist in the 'H' and 'N' genes and which



can further modify a virus's properties. The 1918 flu and the 2009 swine flu were both caused by H1N1 – but they varied in disease severity due to the presence of changes on the H1 and N1 genes.

Taubenberger wanted the 1918 version of H1N1. But there was a problem. The virus had vanished after 1920, when the pandemic ended. While there were subsequent influenza outbreaks later in 1957, 1968, and 1977, those viruses were different and nowhere near as deadly as the 1918 strain. Taubenberger was adamant to use the worst of all influenza variants in his studies because studying that strain was imperative, he believed, to understanding influenza.

#### **A letter from Johan Hultin**

With great difficulty, he obtained the preserved lung samples of a soldier who had died of the disease in 1918, and extracted a small portion of the genetic material of the virus. However, because he was running out of starting material, Taubenberger couldn't generate the complete RNA sequence. So, together with another scientist named Ann Reid, he ended up publishing a small part of the sequence in March 1997.

A few months later, Taubenberger received a letter from a doctor named Johan Hultin, who had read his article, and offered a solution to his small sample problem. Dr. Hultin claimed that in a small ocean-side village in Alaska, called Brevig Mission, there existed a mass grave in which 72 people who had all died due to the Great Influenza epidemic in 1918 had been buried. The Alaskan permafrost would have ensured the bodies were preserved almost perfectly – along with the virus.

Dr. Hultin continued that he had visited the site in 1951 and had brought a few samples back. But due to the long return journey, the samples began to thaw, and he had to refreeze them with carbon dioxide from a fire extinguisher. But despite his best efforts, he couldn't protect them, and the multiple freeze-thaw cycles destroyed the samples.

Over a telephone call, Dr. Hultin offered to go back to Brevig Mission to retrieve more samples at his own expense. Taubenberger agreed.

#### **Full genetic sequence**

And so, in August 1997, Johan Hultin, at the age of 72, went back to Brevig Mission to finish what he set out to do as a young graduate student 46 years earlier – to get the deadly 1918 H1N1 influenza virus. The task ahead of him was fraught with the risk of him contracting the deadly virus, and almost certain death after. But neither that nor the lack of specialised equipment proved to be a deterrent for Dr. Hultin. He went ahead with his mission just the same.

The samples he brought back allowed Taubenberger and Reid to determine the virus's full genetic sequence. The sequence allowed other scientists to unearth insights into the virus's beginnings. It appeared to have an ancestor that was avian in origin. But there were also tell-tale signs that the virus had adapted, by evolving, to infect mammals.

In other words, the ancestral virus that infected birds had switched to infecting humans or swine. It had also been circulating for a few years, getting better at its job, before it vanished. Sometime later, it reemerged as one of the deadliest pathogens ever to afflict humankind.

But for all these remarkable insights, the virus's genetic sequence revealed nothing dramatic about the virus itself. It failed to explain how it could infect people so quickly or why it killed



millions. There were minor variations in the genetic material but this is to be expected for RNA viruses. There remained but one way to answer that question: to recreate the virus itself.

The United States Centers for Disease Control and Prevention (CDC) is the apex organisation in the U.S. on matters of public health and safety. Research on any new infectious agent must be first approved by the CDC. But in 2005, the CDC received an application for study on a very old infectious agent.

The researchers in question wanted the body's approval to recreate a deadly pathogen – one that had not infected anyone since 1920. Despite the serious risk to the public, the CDC scientists carefully reviewed the application and granted permission to perform the requisite experiments necessary, because they deemed the experiments the researchers had proposed to be sufficiently important.

The applicants wanted to recreate the H1N1 influenza virus – which had killed around 50 million people in an outbreak in 1918 – from its genetic material.

The CDC, realising the value of the proposal, installed special security measures. Only one man, Terrence Tumpey, was authorised to work on the project, and that too in complete isolation. He was allowed to work only after all his colleagues had left for the day, and his laboratory and freezers were fit with biometric access restrictions.

Tumpey was to wear a specialised respirator mask that allowed him to breathe only filtered air. He was required to wear two pairs of gloves, shoe covers, and a full-body surgical gown, and he would have to take a shower every time he left the laboratory. He also had to constantly take antiviral medication, and he was informed that should he contract the virus, he would be isolated and would not be able to contact anyone in the outside world, including his family.

Working this way, Tumpey first generated 'recombinant' viruses. These are artificial viruses generated in the laboratory such that they contained just the H1 and N1 gene segments from the 1918 strain, while the remaining pieces of the genetic material came from a regular laboratory strain that did not cause severe disease (in mice). The objective of his experiment was to identify which of the eight gene segments of the 1918 virus was responsible for its unprecedented power.

Tumpey thought that, when complemented with the genes from the 1918 strain, the laboratory strain might be able to cause slightly more severe disease in mice. He was wrong: the H1 and N1 genes of the 1918 virus made the laboratory strain so virulent that within five days, all the infected mice had died.

An autopsy of the deceased rodents revealed that while there was extensive lung damage, the virus was not found in the other major organs of their bodies – brain, liver, spleen, etc. The virus mainly infected the lungs, and laid waste to them.

Tumpey continued his experiments with the recombinant viruses. He found that while all eight pieces of the virus's genetic material caused severe disease, two in particular stood out: the haemagglutinin and the RNA polymerase genes.

Haemagglutinin is the protein on the outer surface of the virus that docks with proteins on the cells of another organism. This way, the virus has a portal through to begin its invasion. The haemagglutinin segment of the 1918 strain contained modifications such that the virus could easily gain access to cells.



The viral RNA polymerase, on the other hand, makes copies of the viral genetic material. In the H1N1 strain, the polymerase was extremely efficient at this process, allowing the virus to make numerous copies of itself in a very short span of time. This then took a heavy toll on the infected cell, since the virus hijacked the cellular machinery to replicate itself.

All the experiments that Tumpey had conducted until then were suggestive, not conclusive. He had inserted pieces of the 1918 H1N1 virus inside a regular laboratory strain and found that doing so increased the virulence of the laboratory strain. Results obtained with such an experimental system would always leave room for doubt as to whether the real, complete virus would have behaved similarly. But there could be no room for doubt in this endeavour.

As a result, Tumpey had to recreate the full 1918 H1N1 influenza virus to solve this conundrum. He mixed the genetic material of all the eight individual pieces of the virus and put them in the same cell. In a few weeks, the world's deadliest virus appeared in his cell-culture plates, back from extinction after nearly a century.

The full virus demonstrated a pathogenicity unrivalled by any other influenza virus scientists have ever studied – recombinant or natural. It was highly virulent: there were 39,000-times more virions (virus particles) in the lungs of the mice infected with the 1918 virus than those infected by the more benign laboratory strain. The former lungs were filled with fluid within days, causing extensive lung damage and resulting in death.

Tumpey also found that while the haemagglutinin and the RNA polymerase genes were important reasons for the extreme nature of the 1918 virus, by themselves they did not wreak just as much havoc as when they did in combination with the other gene segments.

This is because individual genes of a virus seldom undergo changes in isolation. Every change will, likelier than not, influence other genes of the virus – especially changes that produce effects as large as those of the haemagglutinin and the polymerase genes of the 1918 virus.

All viruses have to ensure they will be transmitted to more hosts. A virus that kills its host too soon will fail at this objective because a virus is only alive as long as it is inside a host. So a change in a virus that makes it more pathogenic will either kill the host faster or it will become an easier target for the host's immune system. Both outcomes are detrimental to the virus's long-term survival.

So such genetic changes must be associated with alterations elsewhere in the genome that mitigate those effects on the creature's long-term survival prospects. It could be a mutation that enhances its transmission rate, one that slows the viral life cycle, or something else that allows the virus to escape the immune system long enough for it to be transmitted.

The 1918 virus had an enhanced transmission rate due to its unique haemagglutinin, a highly active polymerase to speed up the viral replication, and (as a result) disease progression, plus a few smaller changes that allowed it to better escape the immune system. Taken together, it had the perfect tools in its arsenal to make it the ultimate killing machine.

#### **A new benchmark**

The work of Jeffery Taubenberger, Ann Reid, Johan Hultin (described in the previous article), Terrence Tumpey, and other scientists who were involved in the effort collectively showed to the world how the 1918 influenza virus originated, and why it was so deadly. Taubenberger and





Reid's determination of the genetic sequence also laid the foundation for future scientists to better understand how the influenza virus causes disease.

More importantly, their work created a benchmark. The 1918 H1N1 strain was the deadliest influenza virus to ever strike humans. By thoroughly characterising its genetic features, the researchers set the stage for others to discern similar features in the various influenza variants circulating today, which in turn eased the way to better vaccine designs, with higher efficacy, as well as to other therapeutics to prevent the disease from emerging as a global health concern once more.

Since 1918, there have been three major influenza pandemics: in 1957, 1968, and 2009. None of them were as severe as the one in 1918. The death tolls in 1957 and 1968 were estimated at 1 million; that in 2009 was lower, around 0.3 million.

But the 1918 influenza pandemic is a reminder to us all, especially in the wake of the COVID-19 pandemic, that ever so rarely, nature will arrive at that perfect, deadly combination after mixing thousands of genes and end up creating something as destructive as the 1918 H1N1 influenza virus. Ironically, nature's ability to do so is at the very heart of evolution, and of all life on earth.

- Influenza viruses are almost always circulating among humans. The nature of the virus means that every year, the virus's genetic material undergoes some minor changes, rendering it a little different from the virus of the previous year. So scientists have to guess which changes are likely to survive the next year, and design or update their vaccines accordingly.
- Terrence Tumpey first generated 'recombinant' viruses. These are artificial viruses generated in the laboratory such that they contained just the H1 and N1 gene segments from the 1918 strain, while the remaining pieces of the genetic material came from a regular laboratory strain that did not cause severe disease (in mice).
- All the experiments that Tumpey had conducted until then were suggestive, not conclusive. He had inserted pieces of the 1918 H1N1 virus inside a regular laboratory strain and found that doing so increased the virulence of the laboratory strain.

#### HOW CAN 'ONE HEALTH' HELP INDIA, AND INDIA HELP 'ONE HEALTH'?

The concept of 'One Health' is currently gaining popularity worldwide; India has of late been taking significant strides to deploy concepts and strategies rooted in this idea to bolster the way it responds to health crises. However, One Health is not a new concept.

One Health is a holistic approach to problems that recognises the interconnections between the health of humans, animals, plants, and their shared environment. An early articulation can be found in the writings of Hippocrates (460-367 BC), who contemplated the relationships between public health and clean environments.

The 19th-century German physician and pathologist Rudolf Virchow (1821-1863) later wrote: "Between animal and human medicines there are no dividing lines – nor should there be." More recently, the eminent veterinarians James Steele (1913-2013) and Calvin Schwabe (1927-2006) have championed the value of ecology for both animal and human health.



### Why is One Health special?

Human population growth, urbanisation, and industrialisation have compounded the damage to biodiversity and ecosystems. These harmful environmental changes are linked to zoonoses – diseases shared between animals and humans. Researchers have estimated that 60% of emerging diseases that can infect humans are zoonotic in nature. They include bird flu, Ebola, rabies, and Japanese encephalitis.

In addition, humankind has also become beset by major issues of antimicrobial resistance, food safety and security, and the control of vector-borne diseases. Taken together, these issues warrant both the intersectoral management and the efficiency that characterises the One Health strategy.

One Health minimises resource requirements across sectors. An important way it does this is by encouraging coordination across governmental units, including the Ministries of Health and Family Welfare, Fisheries, Animal Husbandry and Dairying, Environment, and Science and Technology. Taking a One Health approach allows researchers to, for example, share their laboratories and findings, and ultimately make decisions that lead to resilient, sustainable, and predictable policies.

The economic benefits of One Health are understood in contrast to the cost of managing a pandemic with a non-One-Health approach. An assessment of the G20 Joint Finance and Health Taskforce estimated the latter to be around \$30 billion a year. On the other hand, estimates by the World Bank have indicated that the former would cost \$10.3 billion to \$11.5 billion annually.

### Recent One Health initiatives

The COVID-19 pandemic of 2020-2023 highlighted the importance of adopting a One Health approach. Since COVID-19, many interventions based on the One Health model have been launched worldwide.

The Government of India established its 'Standing Committee on Zoonoses' in 2006 under the Ministry of Health and Family Welfare (MoHFW). The purpose of this committee was to provide the Union and the State governments guidance and recommendations on challenges related to zoonoses. But the pandemic provided the real boost to this topic; India has also floated a number of initiatives in this direction since then.

The Department of Biotechnology launched India's first consortium on One Health in October 2021. It brings together 27 organisations from several ministries and plans to assess the burden of five transboundary animal diseases and 10 select zoonotic diseases. The government has allocated ₹ 31 crore for three years to the consortium, especially for its promise of improving cross-cutting collaborations between the animal, human, and wildlife sectors.

In June 2022, the Department of Animal Husbandry and Dairy (DAHD) – in partnership with the Bill & Melinda Gates Foundation and the Confederation of Indian Industry – launched a One Health pilot project in Karnataka and Uttarakhand. This initiative intends to strengthen intersectoral collaborations through capacity-building, with the goal of improving livestock health, human health, wildlife health, and environmental health.

India is also currently preparing for a wider 'National One Health Mission' to be spearheaded by the Office of the Principal Scientific Advisor. The idea behind this mission is to coordinate, support and integrate all existing One Health initiatives in the country.



## A TRIAL TO TEST A NEW PATH FOR PREVENTING ALZHEIMER'S

There is no problem posed to brain functioning as long as the oxidative radicals are balanced by antioxidant enzyme glutathione; studies done in India in Alzheimer's patients showed reduced levels of glutathione and oxidative build-up

They found that the drug slowed cognitive decline in 47% of those who took the drug, vis-à-vis 29% who got a placebo. 'Slowed' here meant staving off the disease for six months to a year, when judged by multiple factors.

Donanemab, while still in trials, follows on the heels of another drug, lecanemab, from Eisai, a Japanese pharmaceutical company that was fast-tracked by the United States Food and Drug Administration.

A third drug called aducanumab was approved by the FDA in 2021, but as an analysis in the JAMA Neurology reported last October, donanemab and aducanumab were not "cost effective," given their cost and the limited improvement in the quality of life.

The common thread in these drugs, other than being monoclonal antibodies (lab-synthesised to mimic natural antibodies) is that they neutralise the build-up of amyloid protein in the brain, believed to be most significantly associated with the disease.

Elevated levels of amyloid form plaque and trigger another protein called tau that damages brain cells, causing the cognitive decline typified by the disease. There were a further set of complications associated with donanemab in the trial. Donanemab, like lecanemab and aducanumab, could cause fatal brain bleeding and seizures.

Nearly a fourth of the participants in the Eli Lilly trial were afflicted by bleeding and three died of it.

### **Natural defence**

The limited success with drugs that target only the amyloid protein buildup suggests that there may be other factors responsible for triggering the disease.

One of these is the oxidative stress hypothesis, which suggests that the brain remains healthy as long as 'free radicals' that are produced in the course of the various biochemical reactions in the body are kept in check by 'anti-oxidants.' This is a theory that predates the nearly quarter-century investigation into amyloid-linked causes of dementia but of late has gained greater significance with researchers around the world, including in India, designing trials and therapies to test its implications.

Free radicals often damage healthy cells, and are believed to be involved in a range of diseases including Parkinson's. The natural defence against such unwanted oxidation is a range of 'antioxidant enzymes'. "The antioxidant enzymes catalyse the reaction of reduction of free radicals, which diminishes their power and hence oxidative cytotoxicity," says a 2013 study in the journal *Psychiatra Danubina*.

As long as there is a balance between the oxidative molecules and antioxidants to neutralise them, the body remains healthy. While there are several of these antioxidants, a prominent one is glutathione.



This entity has a way of directly blocking free radicals and also maintains the vitamins E and C in reduced forms, conferring antioxidant properties on them. In brain imaging studies conducted in his lab, Dr. Pravat Mandal, of the National Brain Research Centre, Manesar, has linked low levels of glutathione and high levels of iron and copper (highly oxidative) in the brain with early signs of the cognitive impairment that is typical of Alzheimer's.

#### Role of oxidative stress

Later this year Dr. Mandal and doctors at AIIMS, Delhi are set to begin a clinical trial testing whether cognitively impaired patients would benefit from 500 mg of glutathione being orally administered. Separately, his group is testing, along with Medanta Hospital, Gurugram, if a blood test can determine critically low levels of glutathione in the brain, which currently can only be determined via magnetic resonance imaging (MRI).

While the disease is irreversible once plaques set in, identifying the conditions that trigger these plaques can significantly improve life prospects, said Dr. Mandal.

There were 55 million globally living with dementia – the most common cause of which is Alzheimer's disease. This number is expected to double every 20 years and be about 78 million by 2030, according to an estimate by Alzheimer's Disease International.

#### EXPRESS VIEW ON 10,000 STEPS A DAY: 6,033 TOO MANY

Perhaps there is a valiant heroism — akin to fighting dragons or scaling craggy mountains to rescue princesses or princes — in meeting the goal of 10,000-steps-a-day that keeps people chasing that terrifying number. Or perhaps it is that the number — big, round, impressive — has a nice ring to it. Whatever the reason, those who shrivelled under the disappointed gaze of their trainers for having failed to meet this immodest goal may rest assured knowing that the latest research has their aching backs: As per a study published earlier this month in the European Journal of Preventive Cardiology, all one needs to do in order to reduce the risk of dying from any cause is walk 3,967 steps a day.

Shaving the extra 6,033 steps from their daily goal may just be the boost that many people need to at least attempt to meet their fitness goals. And, to set the record straight, the worldwide popularity of the 10,000-steps-a-day dogma was the result not of scientific research, but a great marketing campaign. As it turns out, the completely arbitrary figure was arrived at by a Japanese company, which designed the world's first wearable pedometer, called manpo-kei — that is "10,000 step meter" — in the 1960s.

Not that walking 10,000 steps a day will have any adverse effects on one's health. The Polish researchers behind the latest studies point out that each increase of 1,000 steps will cut the risk of dying of any cause by 15 per cent. And for those who are intimidated even by the 3,967 step count, here's some further assurance: Just 2,337 steps a day can cut the risk of dying from cardiovascular diseases. Surely that is reason enough to finally dust off those walking shoes?

#### TOXIC FEMININITY: THE MANY DIVERSE INTERPRETATIONS OF THE CONCEPT

Different perspectives of the concept shed light on different facets of societal gender dynamics. While feminist perspectives emphasise the impact of gender expectations on women, alternative understandings claim it to be a tool for women to dominate others while appearing weak and powerless



While it is not known when the term toxic femininity was first used, its origins are interlinked to the concept of toxic masculinity, a term coined by Shepherd Bliss during the mythopoetic men's movement in the 1980s.

The concept of toxic femininity gained popularity in the 2010s with feminist writers and scholars explaining how it confines women to traditional and stereotypical expectations of women's behaviour. Meanwhile, anti-feminist and conservative interpretations of the term are once again back in the spotlight, with the recent worldwide box-office success of Barbie.

### **Toxic masculinity**

Before delving into the conceptualisation of toxic femininity, it is crucial to grasp the concept of toxic masculinity. American psychology professor and writer Shepherd Bliss introduced the term to describe authoritarian masculinity and the emotionally distant father-son relationships that often lead to the sons growing up as similar emotionally distant, violent, and misogynistic men who assert their power through dominance, particularly over women. This understanding suggests that fostering a strong emotional bond between fathers or father figures and their sons can help prevent the development of toxic masculine traits. According to sociologist Michael Flood, the term entailed the worst aspects of stereotypically masculine attributes," including "violence, dominance, emotional illiteracy, sexual entitlement, and hostility to femininity."

Feminists adopted this term to characterise homophobic and misogynistic speech and violence perpetuated by men, initially focusing on marginalised men from low-income backgrounds. However, it gained prominence in describing the sexist and toxic behaviour of powerful elite men, particularly since the #MeToo movement in 2016.

### **Defining toxic femininity**

As opposed to toxic masculinity, whose definition has remained rather consistent, there have been many interpretations of the concept of toxic femininity. From a feminist perspective, toxic femininity arises from societal gender expectations imposed on women. Women who conform to the stereotype of being quiet, submissive, and accepting of male domination embody toxic femininity, which perpetuates the silent acceptance of men's aggression as a means of survival.

This phenomenon can be seen as internalised misogyny, compelling women to adhere to societal norms that keep them subservient. Similar to how fathers may pass down toxic traits to their sons, mothers can inadvertently perpetuate stereotypical gender roles in the next generation of women. Women are taught to remain passive, to never assert themselves in public spaces, tolerate sexist remarks and jokes, and even endure domestic violence. Scholars argue that toxic femininity enables toxic masculinity by reinforcing the power dynamic, as women's submission allows men to treat them as possessions.

Alternative perspectives view toxic femininity as a tool wielded by women to gain power within a patriarchal structure. In this interpretation, women engage in manipulation, jealousy or use their position as victims to dominate others while appearing weak and powerless. This perspective positions toxic femininity as a counterpart to the negative traits associated with toxic masculinity. Further, conservatives employ this interpretation to undermine femininity and use it to shift blame onto women for the toxic behaviour exhibited by men, contending that men's actions are merely responses to the toxic traits of women. For example, the prevalence of articles on "handling a crazy woman" illustrate how this concept has been manipulated within a patriarchal structure to blame the victim.



The conservative understanding of toxic femininity extends further, often equating it with toxic feminism and using the terms interchangeably. Within Men's Rights Activist discourse, toxic femininity is viewed as a form of man-hating that victimises men. This perspective contends that toxic masculinity is a tool used by toxic women to accuse men. Denying that patriarchy systematically disadvantages women and arguing that toxic femininity poses a greater threat to men than toxic masculinity does to women, these proponents claim that radical femininity disrupts traditional family structures and societal norms. Recent controversies surrounding the movie Barbie, which challenges and critiques patriarchy in a unique manner, highlight how some view it as promoting toxic femininity.

### **Creating a gender binary**

The various interpretations of toxic femininity inadvertently reinforce the gender binary. When discussing the toxic aspects of femininity, one inevitably creates an idealised notion of femininity. Defining healthier versions of femininity and masculinity continues to divide gender into two distinct categories, overlooking the fluid nature of gender identity, which does not rigidly separate masculinity from femininity.

While conservative versions of the concept attempt to glorify the stereotypical roles assigned to women, other perspectives reinforce the gender binary, barely leaving any space for people from the LGBTQ+ community who cannot be confined to it.

Furthermore, when examining the connection between dominant forms of masculinity and subservient forms of femininity along a single gender axis, intersectionality with other identities is often overlooked. Considering the toxic nature of femininity through the lens of intersecting identities such as race, class, caste, and others adds complexity to the concept, especially since the attributes and characteristics attached to men and women can differ according to different conditioning, circumstances and societal norms.

Toxic femininity as a concept with diverse interpretations sheds light on different facets of societal gender dynamics. While feminist perspectives emphasise the impact of gender expectations on women and the perpetuation of subservience, alternative understandings claim it to be a tool of power for women within patriarchal structures. However, it is essential to recognise that these interpretations may inadvertently uphold the gender binary and oversimplify the complex interplay of gender with other aspects of identity.