



CURRENT AFFAIRS FOR UPSC

24th to 30th March 2024



INTERNATIONAL

The U.S. Supreme Court on Tuesday is poised to consider whether to restrict access to the abortion pill as President Joe Biden's administration fights to maintain broad access to the medication in a major case that thrusts reproductive rights back on the agenda of the justices in a presidential election year.

The Supreme Court, which has a 6-3 conservative majority, in 2022 overturned its 1973 *Roe v. Wade* precedent that had recognized a constitutional right to abortion, prompting numerous states to enact Republican-backed measures banning or sharply restricting the procedure. Since then, medication abortion has become the most common method of ending pregnancies in the United States, now accounting for more than 60% of abortions.

Case Background: The Supreme Court is considering whether to restrict access to mifepristone, a medication used for medication abortions, following a challenge brought by four medical associations and four doctors who oppose abortion in Texas. The challenge targets regulatory changes made by the Food and Drug Administration (FDA) that allow for expanded access to the medication.

Biden Administration's Position: The Biden administration is appealing a lower court's ruling that would limit how mifepristone is prescribed and distributed. They are fighting to maintain broad access to the medication, including allowing medication abortions up to 10 weeks of pregnancy and allowing mail delivery of the drug without an in-person clinician visit.

Supreme Court Review: The case puts at risk the FDA's regulatory authority over drug safety, and the Supreme Court, which has a conservative majority, is reviewing a decision by the 5th U.S. Circuit Court of Appeals that criticized the FDA's decisions to ease restrictions on mifepristone.

Arguments and Demonstrations: The case has prompted demonstrations both in favor of abortion rights and against them. Proponents of abortion rights argue for bodily autonomy, while opponents express concerns about the safety of medication abortions.

Legal Standing and Expected Ruling: The Supreme Court is also tasked with determining whether the plaintiffs challenging the FDA's actions have the proper legal standing. A ruling is expected by the end of June.

Mifepristone is taken with another drug called misoprostol to perform medication abortions.

WHY ROBERT F KENNEDY JR'S US ELECTIONS CANDIDACY HAS JOE BIDEN SWEATING

Robert Francis Kennedy Jr, known simply as RFK Jr, is contesting in the upcoming United States presidential elections as an independent, hoping to disrupt the country's deeply entrenched two-party system.

On Tuesday (March 26), he named Nicole Shanahan, a 38-year old Silicon Valley attorney and entrepreneur, as his running mate. RFK Jr hopes that Shanahan's deep pockets, rags-to-riches story, and tech sector expertise will provide a boost to his campaign, which, according to some political analysts, has incumbent President Joe Biden sweating.

Kennedy Name and Background: RFK Jr. comes from a prominent political family, being the son of former U.S. Attorney General and Senator Robert F. Kennedy and the nephew of former



President John F. Kennedy. He has built a career as an attorney, environmental activist, and politician, leveraging his family name.

Anti-Vaccine Stance: RFK Jr. has gained notoriety for his vocal opposition to vaccines, spreading scientifically debunked conspiracy theories linking vaccines to autism. Despite his Democratic background, his anti-vaccine stance has alienated some within the party.

Impact on the Race: While third-party candidates historically haven't had significant success in U.S. presidential elections, RFK Jr.'s candidacy has generated media attention and concerns within the Democratic establishment. Polls suggest he could attract a portion of voters disaffected with both Biden and former President Donald Trump, potentially acting as a spoiler candidate.

Challenges and Democratic Response: RFK Jr. faces challenges in getting on the ballot in all 50 states, with the Democratic Party reportedly setting up a legal team to navigate ballot rules and potentially keep him off the ballot in key swing states.

Potential Influence: Despite his controversial views, RFK Jr.'s family name still holds sway, and some analysts believe he could attract Democratic votes based on his lineage. However, his candidacy ultimately poses a challenge to the Democratic Party's efforts to secure a victory in the upcoming election.

Overall, RFK Jr.'s candidacy introduces an element of uncertainty into the political landscape, particularly as the race heats up and both major parties vie for support.

CHARTING WOMEN'S TRAJECTORY IN PARLIAMENTS GLOBALLY

The year 2024 is being hailed as the biggest year for democracy, with 45% of the global population preparing to exercise their voting rights or having already cast their ballots. It thus becomes imperative to assess how women are represented in politics and leadership roles.

Women's representation in political spheres improved in the latter half of the 20th century, with significant progress made in many nations in securing voting rights and parliamentary seats, and in climbing to the highest political offices. However, this has been uneven. And despite substantial gains, women continue to constitute a minority in most parliamentary bodies and are rarely seen in top political leadership positions.

Data compiled by political scientist Svend-Erik Skaaning and colleagues show that until the mid-19th century, universal suffrage was virtually non-existent for both men and women across the world. However, a stark divergence then emerged, as men in certain nations were granted voting rights while women were excluded. New Zealand broke this pattern by extending universal suffrage to women in 1893.

The gap between male and female political participation widened in the early 20th century, despite women gaining suffrage in more countries, as men's voting rights expanded even further. By the onset of World War II, men had the right to vote in one out of three countries, while women did in only one out of six countries.

The gap then rapidly closed when the voting rights discrimination against women ended in many countries, and both women and men gained the right to vote in many others.

In the early 20th century, women were largely absent from national parliaments, according to data based on the Varieties of Democracy (V-Dem) project. Norway first saw women enter



parliament in 1907; nearly 10% of the country's parliamentary seats were occupied by women. But the latter half of the 20th century witnessed a significant surge in the number of women entering parliament. This trend accelerated in the late 20th and early 21st centuries. Rwanda's parliamentary composition surpassed the 50% mark for women's representation in 2008, setting a remarkable precedent. In the same year, countries such as Argentina, Cuba, Finland, and Sweden had between 40% and 50% women parliamentarians.

However, despite the progress, women's political representation has been limited and uneven. Women make up about half of all the representatives in only a few countries. As of 2022, in close to 60 countries, the share of women in parliament was 20% or less. And in three countries, there are no woman (Chart 3). The chart shows the share of seats in the lower or single chamber of the legislature held by women as of 2022.

While women's representation in parliament is important, so is their representation in a country's highest political office. Data from V-Dem shows that at any given point in time, almost all political chief executives have been men. Here, the term "chief executive" means the head of state or head of government, depending on who has more power. There has been a slight increase in the share of countries led by women in the last three decades. However, the share of countries where woman occupy the post of chief executive is still less than 10%.

JULIAN ASSANGE GRANTED TEMPORARY REPRIEVE FROM EXTRADITION TO THE U.S.

Wikileaks founder Julian Assange was granted a temporary reprieve from being extradited to the U.S. from the U.K., after the British High Court ruled on Tuesday that he would not be extradited immediately and gave the U.S. three weeks to provide assurances regarding the trial of Mr. Assange.

The U.S. wants to try the 52-year-old Australian on 18 counts, for obtaining and publishing sensitive U.S. military and diplomatic information. Seventeen of the charges against him are under the U.S.'s Espionage Act. Mr. Assange has been imprisoned in London since 2019 after spending approximately seven years in the Ecuadorian Embassy in London, where he had sought refuge from extradition to Sweden on rape charges. The investigation was dropped by prosecutors in 2019 due to lack of sufficiently strong evidence.

Mr. Assange has sought an appeal of the U.K. government's 2022 decision to extradite him on nine separate grounds. The High Court, which permits under-trials to appeal if it believes there are grounds to do so, said it was of the view that three of these grounds had a "real prospect of success"

The court gave Washington three weeks to assure it that Mr. Assange would not face the death penalty (which is technically applicable in cases of treason under U.S. law). It also sought assurances that Mr. Assange, an Australian, would be able to rely on the U.S. Constitution's First Amendment (freedom of speech) rights during his trial and that the trial would not be prejudiced because he is not an American Citizen.

Decision by May 20

"It has given the Government of the United States of America and the Secretary of State an opportunity to offer assurances that would address those grounds of appeal," the High Court said on Tuesday. If Washington's response was not satisfactory, the court would allow Mr. Assange to appeal.



A decision is expected on May 20, which means Mr. Assange will not be extradited at least until then.

Addressing the media outside the Royal Courts of Justice in London, Mr. Assange's wife Stella Assange called the ruling "astounding".

She said that though the court had recognised the risks Mr. Assange was exposed to, it had sought a "political intervention" from the U.S., asking Washington to declare, "It's all okay."

The Biden administration should not issue assurances, Ms. Assange said, asking it instead to drop this "shameful case".

In its 2019 indictment, the U.S. had said that starting in 2009, Mr. Assange aided, abetted and caused a (then) intelligence officer, Chelsea Manning, to give him classified documents.

STOP THE WAR

Five and half months after Israel's assault on Gaza began, in which 32,000 Palestinians have been killed, another 74,000 injured, more than 90% of the enclave's population displaced and nearly all of them pushed into a devastating hunger crisis, the UN Security Council (UNSC), on March 25, called for "an immediate ceasefire" and release of all hostages held by Hamas. The United States, which has vetoed every UN resolution earlier that called for an immediate ceasefire in Gaza, abstained this time, signalling a change in the Biden administration's policy towards the war. All other members of the UNSC, including Britain, which until recently had resisted calls to back a ceasefire, voted for the resolution. Israel responded angrily, cancelling a planned visit of two of Prime Minister Benjamin Netanyahu's close cabinet aides to Washington, and, backed by China and Russia, blasting the resolution, for not conditioning a ceasefire on the release of hostages. But beneath the anger and outburst lies Israel's weakness. Israeli leaders have repeatedly said in recent weeks that an invasion of Rafah, the southernmost town where some 1.4 million Palestinians have been cramped into, was in the offing. It would be highly inappropriate, after 14 members of the UNSC called for an immediate ceasefire, for Israel to launch an attack on Rafah, which could end up in another bloodbath.

The latest war was triggered by Hamas's October 7 cross-border attack where at least 1,200 Israelis were killed. Israel had the sympathies and solidarity of the world on that day. But what Israel did in subsequent months was to punish the entire population of Gaza for what Hamas did, which turned international public opinion against it. If Israel makes an objective assessment of the situation, it should immediately abide by the UNSC resolution and declare a ceasefire. The October 7 attack itself was a massive intelligence and security failure for which Mr. Netanyahu should take responsibility. Instead of doing that, he went to war with full force, without proper achievable targets. After months-long fighting, Israel has turned much of Gaza into rubble, but has neither destroyed Hamas nor rescued hostages. The prolonged war has created fissures within the Netanyahu cabinet. The Prime Minister is immensely unpopular and his coalition partners are at war with one another. The war has also increased Israel's isolation, with tensions rising in its ties even with its close partners, including the U.S. If Israel continues the war with no clear end in sight, it will only worsen the domestic and international challenges it is facing, besides killing more Palestinians in the defenceless, battered, besieged, bombed-out Gaza. Mr. Netanyahu faces two choices. He can take the message from the UNSC seriously, stop the war, allow urgent humanitarian assistance into Gaza and continue talks with Hamas through international



mediators for both the release of all hostages and the withdrawal of his troops from the enclave. Or, he can continue to lead his country in the dark in a state of permanent war.

AN EXPERT EXPLAINS: WHY US ALLOWED UNSC RESOLUTION ON GAZA CEASEFIRE TO PASS

The UN Security Council this week demanded an immediate ceasefire between Israel and Hamas, and the immediate and unconditional release of all hostages, after the United States, which has repeatedly used its veto to shield its ally Israel, abstained from the vote. Why is this important, and does it matter?

The US has historically gone to great lengths to protect Israel from censure. Why did it abstain in the recent vote?

Historically, there has been broad bipartisan support in the US for Israel. But the situation in Gaza has divided opinion — a significant section of Americans is now critical of both Israel's action, and the full US backing for it.

This is important also in the context of the presidential election in November. For President Joe Biden, the Arab and Muslim vote, as well as the vote from the Democratic party's left wing, will be crucial — and these voters have been critical of Israel. Swing states like Michigan and Wisconsin (both of which Biden carried in 2020) have significant Muslim populations, and will be crucial for the President in his likely re-match with Donald Trump.

Also, many Arab countries, some which are important partners to the US, are growing increasingly concerned at Israel's actions.

It is due to these reasons that the US felt it was politically prudent to not use its veto to block the call for an immediate ceasefire. In fact, only a couple of days earlier, the US itself had sought to move a resolution calling for a ceasefire and release of hostages, which was vetoed by Russia, which found some of the language unacceptable.

Has the US allowed a UNSC resolution critical of Israel to pass earlier? Does this mark a shift in US policy?

It is definitely an important signal from the US, which has been supportive of the Israeli government in the UNSC since the Hamas attack on October 7, 2023.

However, this is not the first time that the US has distanced itself from the Israeli position. In the final days of the Obama administration in 2016, the UNSC passed a resolution deeming Israel's settlements in Palestine illegal and a violation of international law, after the US abstained. Then, like now, relations between Israel's Prime Minister [Benjamin Netanyahu] and the US President were frayed over multiple issues.

Nonetheless, it is rare for the US to not provide cover to Israel in the UNSC. According to an analysis by the think tank Chicago Council on Global Affairs, until December 18, 2023, the US had vetoed 45 resolutions critical of Israel, accounting for more than half of its 89 vetoes in the UNSC.

Is the UNSC resolution binding? How can it be enforced?

In general, UN General Assembly resolutions are in the nature of recommendations, which explicate the UN membership's position on a certain matter. UNSC resolutions are normally seen



as somewhat more prescriptive. However, there is a difference between UNSC votes under Chapter 6 and Chapter 7 of the UN Charter, with the latter considered as binding.

In any case, options for enforcing a UNSC resolution are limited if the country in question refuses to accept it, as Israel has already done. If the UNSC wants to enforce its decision, it can decide to authorise travel bans, sanctions, or the sending of troops — none of which is going to happen in this case. So the vote is more of a political message, including in terms of the US administration's current stance on the issue.

How will the decision to abstain play out domestically in the US?

It is yet to be seen how Biden's target demographic reacts — or whether the abstention will have any impact on disaffected traditionally Democrat voters.

However, the Republicans are already trying to exploit the situation. Mike Johnson, the Republican Speaker of the US House of Representatives, said last week that he will invite Netanyahu to address a joint meeting of Congress. This is unusual — normally, it is the President who invites a foreign leader to visit, and the leader may on occasion be invited to address a joint sitting. In 2015 though, Netanyahu was invited to address a joint meeting before any invitation from the President.

Democrats have traditionally enjoyed nearly 70-80 per cent of the Jewish vote.

Does the abstention signal any fundamental change in the US position on Israel?

No. The US has taken this position in a very specific situation. Its leaders remain invested in the broader US-Israel relationship. They do not identify all of Israel with Netanyahu, whose relations with the current US administration have deteriorated significantly. Earlier this month, Senate majority leader Chuck Schumer described Netanyahu as an obstacle to peace, and called for early elections in Israel — this is the line that the Democrats are taking, distancing themselves from the ruling dispensation and their political choices, but not necessarily from Israel.

In practical terms, I don't visualise any reduction in the US assistance to Israel. In 2016, the US made a long-term commitment of a 10-year, \$38 billion aid program to Israel. There's also a deep connection between the industries on both sides — for example, the technology for the Iron Dome project, which Israel uses to protect itself from missile attacks, was developed in Israel, but the US had invested a lot of money in it. I do not see the US-Israel aid, trade, or defence partnership deteriorating.

So, what will be this resolution's impact?

It is undoubtedly an important political message in the current context. But it is not going to end the conflict.

The October 7 attacks, viewed as the largest single-day loss of Jewish life since the Holocaust, has left a deep impact on the Israeli psyche. From their perspective, their effort has been to restore deterrence, so something like that never happens again.

To that end, they have set themselves certain fairly maximalist goals, such as eliminating Hamas in its entirety. Such goals can be difficult to achieve, as the US found out in Afghanistan with respect to the Taliban, and Israel itself experienced when it had a military presence in Southern Lebanon from 1982- 2000, which led to a strengthened Hezbollah.



Israel has so far not articulated any sustainable short-, medium-, or long-term goal that could command broader international support.

HOW BAD IS THE HUMANITARIAN CRISIS IN GAZA?

The story so far:

As Israel's war on Gaza is reaching its sixth month, the Palestinian enclave has become the world's "largest open-air graveyard", as the EU's foreign policy chief Josep Borrell put it. The UN has warned that a famine in the tiny strip of land with 2.3 million people is "imminent". Despite growing international calls for a ceasefire, the government of Prime Minister Benjamin Netanyahu vows that it would continue its military operation until " Hamas is dismantled".

What is the situation in Gaza?

The war, which started after Hamas's October 7, 2023, attacks in Israel in which at least 1,200 people were killed, has already destroyed much of Gaza and pushed most of the enclave's population to the southern town of Rafah. According to Gaza's health authorities, the over five months of Israeli attacks has killed at least 32,000 Palestinians, a vast majority of them women and children. More than 74,000 people have been injured. Gaza lacks enough hospitals, medical professionals, medicines, clean water and other healthcare facilities to treat the wounded. "We see patients trying to recover from life-saving surgeries and losses of limbs, or sick with cancer or diabetes, mothers who have just given birth, or newborn babies, all suffering from hunger and the diseases that stalk it," the World Health Organization (WHO) said.

Most of the internally displaced people, roughly two million, are living in make-shift camps in the south. According to the UN, at the schools that shelter refugees, each toilet and shower are shared by hundreds of people. Diseases associated with poor sanitation such as hepatitis A, diarrhoea and other infections are rampant. As per the latest report from the Integrated Food Security Phase Classification (IPC), the situation in Gaza is "catastrophic". Before the war, there was enough food in Gaza to feed its population and malnutrition was rare. Now, "over a million people are expected to face catastrophic hunger unless significantly more food is allowed to enter Gaza," WHO Director-General Tedros Adhanom Ghebreyesus said.

Why is there a severe hunger crisis?

The IPC report states that Gaza is now experiencing the most severe hunger crisis anywhere in the world. If before October 7, 0.8% of children under five were acutely malnourished, that figure went up to 12.4% to 16.5% in February. Gaza needs an immediate increase in supplies of food, water and other essential supplies, it said. Children are dying from the combined effects of malnutrition and disease. And the situation has gradually worsened over the past five months. If the percentage of Gaza's population experiencing famine was roughly 30% in February, it went up to 50% by mid-March. In northern Gaza alone, at least 27 Palestinians, mostly children, have died due to malnutrition and dehydration, according to authorities. The north, where around 3,00,000 people are still living, has been mostly cut off from supplies as Israel has sealed off the border (except one checkpoint that was opened). Most of the aid that enters Gaza passes through two checkpoints in the south.

Experts usually look at three criteria to determine a famine — extreme lack of access to food, high levels of acute malnutrition and child deaths. Northern Gaza is already facing extreme lack of access to food and malnutrition levels and child deaths are steadily on the rise, which prompted



the UN and several global powers to issue urgent calls for a ceasefire and more supplies for Gaza's population.

EXPRESS VIEW: CHINA, PAKISTAN AND A FRAGILE CORRIDOR

Over just one week, Pakistan has witnessed three major attacks on strategic sites. On Tuesday, a suicide bomber drove a vehicle filled with explosives into a convoy near Besham in Khyber Pakhtunkhwa province, carrying Chinese workers from a hydel power project in Dasu. Five Chinese nationals and a Pakistani driver were killed in the attack. On Monday night, Baloch Liberation Army (BLA) fighters attacked a naval airbase in Turbat in Balochistan, killing at least one soldier. And days before that, the BLA attacked Gwadar, where the port is a major part of the China-Pakistan Economic Corridor (CPEC). The CPEC is the lynchpin of Beijing's ambitious Belt and Road Initiative. It would be a mistake for Rawalpindi and Islamabad to view the attacks as merely a security issue. They point to the broader vulnerability of Pakistan's political-economy.

China has reacted strongly to the attacks while reiterating its ties with Pakistan. Foreign Ministry Spokesperson Lin Jian exhorted Islamabad to "hunt down the perpetrators and bring them to justice" and said that "no attempt to sabotage China-Pakistan cooperation will ever succeed". The rhetoric around the "iron-clad friendship" notwithstanding, the strategic and political costs of the CPEC are growing. The latest round of attacks is not the first, of course: In 2021, nine workers from the Dasu plant were killed in a suicide bombing, allegedly by the Tehreek-i-Taliban Pakistan (TTP). Outfits like the TTP and ISIS-K have long harboured anti-China sentiments and Baloch insurgents and the BLA see the CPEC as detrimental to their broader aspirations.

Pakistan's security issues — ranging from its conflicts with Iran and Afghanistan on its western borders to the Baloch separatist insurgency — demand more than just a military response. The fact is that the country's leadership has placed far too many eggs in the CPEC basket. The reliance on China, coupled with its prolonged economic crisis, has made Pakistan more vulnerable on multiple fronts. To address this vulnerability, the country needs a systemic overhaul. The first step should be to open up and diversify the economy. Opening up trade ties with India could send a much-needed signal: It would indicate a much-needed level of maturity on the part of Islamabad and Rawalpindi. It would display to the global community that Pakistan's leadership has the capacity to keep parochial political rhetoric in its place for the sake of the economy. A more broad-based economy is an end in itself. But it will also make Pakistan safer — as things stand, CPEC sites and personnel are prime targets as a disruption to the project has the potential to trigger a larger instability.

WHY ARE ROHINGYA REFUGEES RISKING THEIR LIVES AT SEA?

The story so far:

The dramatic rescue of dozens of Rohingya refugees from the Indian Ocean last week after a wooden boat capsized off the Indonesian coast has once again drawn attention to the plight of the refugees who are increasingly embarking on dangerous sea journeys to seek a better life. As per the United Nations High Commissioner for Refugees (UNHCR), over 4,500 Rohingya refugees set off on dangerous journeys across the Bay of Bengal and the Andaman Sea last year. Of these, 569 people lost their lives or went missing, marking the highest death toll since 2014.



Who are the Rohingya refugees?

The Rohingya are a Muslim minority ethnic group with their roots in the Arakan kingdom in Myanmar, formerly known as Burma. The Rohingya are culturally and religiously distinct from the majority Buddhist population in Myanmar. The Rohingya claim to have lived in Myanmar's Rakhine State for generations, but successive governments in the country have disputed their ties, labelling them illegal immigrants from Bangladesh. Myanmar has refused to recognise them, denying them citizenship since 1982, thus making them the world's largest stateless population devoid of fundamental rights and security.

Their largest exodus began in August 2017 when a massive wave of violence broke out in Rakhine, driving more than 7.5 lakh people to seek sanctuary in Bangladesh to escape the brutality of security forces. Entire villages were razed, families were torn apart, and severe human rights violations were reported. The United Nations has described the 2017 violence as "ethnic cleansing". A 2018 UN fact-finding commission claimed the Myanmar government had "genocidal" intent against the Rohingya.

Why sea journeys?

While over one million Rohingya have fled Myanmar since the 1990s, around six lakh remain in the country, mostly in camps for internally displaced people where their movements and livelihoods are restricted. An estimated 9,60,000 Rohingya, meanwhile, reside in refugee camps in Bangladesh. Most live near the Myanmar border in the Cox's Bazar, which has grown over the years to house some of the world's largest and most densely populated refugee camps. These overcrowded camps lack basic human necessities, forcing the Rohingya to live in harsh conditions. There is a shortage of food, access to water is inadequate, sanitation facilities are missing, healthcare is insufficient, and children are growing up without formal education.

Security conditions also have deteriorated over the years due to gang violence and an increase in arson attacks in camps. Over 60 Rohingya were killed in Bangladeshi camp clashes in 2023. With the option of returning to Myanmar virtually impossible, and worsening conditions in relief camps in Bangladesh, an increasing number of Rohingya have been undertaking dangerous journeys across the Bay of Bengal and the Andaman Sea to Muslim-majority nations of Indonesia and Malaysia. However, human traffickers exploit their desperation, charging exorbitant amounts to ferry them on rickety boats from Bangladesh to Indonesia. The treacherous voyages with inadequate space and in the absence of basic supplies take weeks and sometimes stretch into months. Horrifying accounts of abuse during the journey, including violence against women, have been recorded. Many do not survive the journey.

What about the rising death toll?

The UN estimates that one in eight Rohingya who take the sea route die or disappear in the attempt, making the Andaman Sea and Bay of Bengal among the deadliest stretches of water in the world. Last year, the number of people embarking on sea journeys increased by 21%. The UNHCR reported a 63% increase in deaths or disappearances compared to 2022. The report also highlighted the significant spike in the number of Rohingya arriving in Indonesia via sea in recent years. The number of Rohingya refugees that arrived in Indonesia increased by 1,261% between 2021 and 2023. While 64% of the refugee boats docked in Indonesia last year, compared to 22% in 2022, only one boat carrying 83 individuals reached Malaysia, according to UNHCR data.



NATION

UNBREAKABLE

Prime Minister Narendra Modi's visit to Bhutan last week, while productive, was largely symbolic. Bhutan's Prime Minister Tshering Tobgay's lengthy bilateral with Mr. Modi a week earlier in Delhi, obviated the need for such a second back-to-back visit. The announcement of India's doubling of support for Bhutan's Five Year Plan, from ₹5,000 crore to ₹10,000 crore, was significant, but has been under discussion, and could have been made later, post the elections as well. The highlight of the visit, of Bhutan's King conferring Bhutan's highest civilian award on Mr. Modi, had been announced in 2021 for India's support during the COVID-19 pandemic, and also need not have been done right now. The fact that Mr. Modi went ahead with the visit, despite India's electoral Model Code of Conduct in place, his campaign schedule, and inclement weather in Bhutan nearly derailing the programme, indicates how important it was. The symbolic messaging was three-fold: first, that India is fully committed to Bhutan's development, particularly the upcoming Gelephu Mindfulness City, a project likely to benefit from India's increase in financial support to its neighbour. Second, Bhutan is an integral part of India's infrastructure initiatives for road, rail, integrated check points, and also for energy exchanges on India's grid, both of which are pushing sub-regional trade and travel among India, Bangladesh, Bhutan and Nepal. Third, that India is mindful of Bhutan's increased engagement with China, for the boundary agreement they hope to forge soon, but that it does not intend to give Beijing space in areas of engagement such as trade and investment, where China has made inroads with India's other close neighbours.

As a result, Foreign Secretary Vinay Kwatra may have feigned disinterest when he brushed aside a question on the China-Bhutan boundary talks, but they are important. China-Bhutan talks about the possible swap of land at Doklam to Bhutan's west are, in fact, seen as a threat to India's Siliguri Corridor, whereas China's claim to areas on Bhutan's east could imperil India's border connectivity projects in Arunachal Pradesh. Recent reports, which the Ministry of External Affairs has not denied, indicate that Bhutan may have even asked India to go slow on those projects until its boundary talks with China are complete. As a result, the most important message from Mr. Modi's sojourn was one of a united front at a time of change. Accepting his award, Mr. Modi called India-Bhutan ties "unbreakable". India and Bhutan will need to emphasise that lock-step even more in the days ahead to retain the permanence of their ties in the face of economic and social turmoil within their countries, as well as the challenge in the neighbourhood.

SENSING THREAT FROM CHINA, INDIA JOINS THE RACE TO MINE SEA PATCH

Earlier this month, India applied to the International Seabed Authority (ISBA), Jamaica, for rights to explore two vast tracts in the Indian Ocean seabed that are not part of its jurisdiction. The application to explore one of these regions, a cobalt-rich crust long known as the Afanasy Nikitin Seamount (AN Seamount), is a gambit by India.

Rights to the region have already been claimed by Sri Lanka under a separate set of laws, The Hindu has learnt, but India's application is part-motivated by reports of Chinese vessels undertaking reconnaissance in the same region, a highly placed official, who declined to be identified, confirmed to The Hindu.

The AN Seamount is a structural feature (400 km-long and 150 km-wide) in the Central Indian Basin, located about 3,000 km off India's coast.



From an oceanic depth of about 4,800 km, it rises to about 1,200 metres and is rich in deposits of cobalt, nickel, manganese, and copper.

For any actual extraction to happen, interested explorers — in this case, countries — must apply first for an exploration licence to the ISBA, an autonomous international organisation established under the United Nations Convention on the Law of the Sea (UNCLOS). These rights are specific to areas that are part of the open ocean, meaning ocean — whose air, surface and sea-bed — where no countries can claim sovereignty. Around 60% of the world's seas are open ocean and though believed to be rich in a variety of mineral wealth, the costs and challenges of extraction are prohibitive. Currently, no country has commercially extracted resources from open oceans.

However, another UNCLOS-linked body, the Commission on the Limits of the Continental Shelf, which decides on the limits of a country's continental shelf, may impede India's exploration ambitions.

Countries have exclusive rights up to 200 nautical miles, and its underlying sea-bed from their borders. Some ocean-bound states may have a natural stretch of land, connecting their border and the edge of the deep ocean that extends beyond this 200, as part of their so-called continental shelf. To claim so, however, a country must give a detailed scientific rationale, complete with underwater maps and surveys to show this unbroken land-connect to a scientific commission appointed by the ISBA. If such a claim is approved, then such a country will have primacy to explore and potentially exploit the living and non-living resources in the region.

Normally, claims to the continental shelf do not extend beyond 350 nautical miles from their coast. "However, there is a provision under which countries along the Bay of Bengal can apply a different set of criteria to make claims on the extent of their continental shelf. Using this, Sri Lanka has claimed up to 500 nautical miles. Whether they are actually awarded so we have to wait and see but India has staked a claim for exploration because we have noted Chinese presence. If we don't at least stake a claim now, then this could have consequences in the future," the official said.

EXPRESS VIEW ON GOVERNANCE CHALLENGE IN DELHI: CAUTION, PLEASE

Barely a week after Delhi Chief Minister Arvind Kejriwal's arrest by the Enforcement Directorate in an alleged corruption case, the option of imposing President's Rule in Delhi is reportedly — and disconcertingly — on the table. Lieutenant Governor VK Saxena hinted at it when he said that the Delhi government would not continue to be run from jail.

A case is apparently being put together — the last instance when Delhi was brought under President's Rule, in 2014, is being looked at. There is discussion in the capital's power corridors on Article 239AB, the provision in case of failure of constitutional machinery, and its sub-clauses. The fact, however, is that 2024 is vastly different from 2014 — at that time, President's rule was imposed after CM Kejriwal resigned following the stalling of his party's effort to introduce the Jan Lokpal bill, and it brought to an end the 49-day tenure of a minority government dependent on the Congress's outside support.

Now, President's Rule, if imposed, would displace a government with a sweeping majority — 62 seats in a House of 70 — after its chief minister was arrested in controversial circumstances ahead of a national election, with the model code of conduct in force. There are no good arguments — only bad faith — in favour of bringing Delhi under President's Rule today.



It does not need any splitting of legal hairs to say that the L-G is right on one thing — the nation’s capital cannot be governed from jail. But having said that, both the Centre and the AAP have to find a different way out. The AAP needs to urgently find a successor to Kejriwal — given the party’s structure and functioning, this is easier said than done.

Kejriwal’s dominance over his party is air-tight and absolute. It has meant that there is no second line of leadership, and it doesn’t help that the few leaders who could arguably have made the cut are also in jail. But the AAP needs to recognise that its insistence on the continuance of Kejriwal and Kejriwal alone as chief minister is untenable in principle and counter-productive as a strategy. If the AAP needs to reboot and rethink, the responsibility on the Centre is much greater. President’s rule would not just undermine representative democracy in general, it would also bode a democratic backsliding in Delhi specifically.

Delhi stands at a unique vantage point. With a division of powers between its elected government and the Centre, but with an assembly of its own, it is poised on the edge of full statehood. The imposition of President’s Rule at this juncture would not only be a blow to the Kejriwal government, it would also constitute a strike against the ambitions and aspirations of the electorate. The Centre must immediately dial back on a proposal that may help it score points against a political opponent — but will do grave disservice to the democratic aspirations of citizens in Delhi.

HC DISMISSES PLEA SEEKING REMOVAL OF KEJRIWAL AS CM

The Delhi High Court on Thursday rejected a petition seeking the removal of Chief Minister Arvind Kejriwal from the post, following his arrest by the Enforcement Directorate in the excise policy case.

In his petition, Surjit Singh Yadav demanded that the Union, Delhi governments and the Principal Secretary to the Lieutenant-Governor be asked to explain under what authority Mr. Kejriwal is still holding the post of Chief Minister.

He contended that the continuation of Mr. Kejriwal as the Chief Minister would not only lead to disruption of law and order but also the breakdown of the constitutional machinery of the State.

The High Court, however, asked Mr. Yadav to show the “legal bar”, which prohibits Mr. Kejriwal from acting as Chief Minister from behind bars.

“239AB [Provision in case of failure of constitutional machinery] is not to be exercised by the High Court, it is to be exercised by the Governor. The Governor will exercise it, and it will go to the President, but the problem is, which we are asking you [petitioner] is, is there any scope for judicial interference on this issue,” the High Court asked.

“We have read today’s newspaper, the Lieutenant Governor is examining this issue. It will go the President for examination, that is up to them. That [task] belongs to a different wing,” the Bench said.

“239AB is not something which we will consider. We don’t have to give them [the executive] any guidance. Why should we pass an order. We don’t impose President’s rule. The executive branch does it,” the Bench said.



The plea argued that “sitting in jail, the Chief Minister is incapable of transacting any business that the law enjoins upon him”. It said if he is allowed to do so, any material, irrespective of its secretive nature, would have to be scanned thoroughly by the prison authorities before it reaches the hands of Mr. Kejriwal.

“Such an act would amount to direct breach of oath of secrecy administered to the Respondent No.4 [Mr. Kejriwal] under the Third Schedule of the Constitution of India,” the plea added.

EASILY PROVOKED

New Delhi and Washington appear to be squaring off for a fight over the U.S. expressing its concerns about the Modi government’s actions ahead of the general election. After the U.S. State Department spokesperson first made a comment on the arrest of Delhi Chief Minister Arvind Kejriwal, the Ministry of External Affairs (MEA) summoned the acting Deputy Chief of the U.S. mission in Delhi and sternly called on the U.S. to desist from interfering in India’s internal affairs. A dressing down was also handed to a German diplomat for a similar statement by Germany. However, while the German government appeared to tone down its remarks subsequently, the U.S. administration seems to have doubled down — repeating statements on the need for “fair, transparent, timely legal processes”, and adding the freezing of the Congress Party’s accounts during the election campaign amongst its concerns, prompting yet another rebuke. The U.S.’s statements, galling for the government, are not new, and its concerns over the Citizenship (Amendment) Act, farmers’ protests, actions against NGOs, and legal action against Opposition politicians have been growing. The Modi government may wish to introspect about whether any of these interventions are valid concerns, and it may be of significance to probe whether this brinkmanship is a symptom of a larger problem in the India-U.S. relationship. Since the U.S. announced an indictment into an alleged assassination plot against a Khalistani separatist and India critic, Gurpatwant Singh Pannun, claiming a link to a top Indian national security official, the quality of public engagement appears to have suffered a setback, even though trade, technology sharing, and military and strategic cooperation remain strong. The decision by U.S. President Joe Biden to decline India’s invitation as Republic Day chief guest and to attend the Quad summit, and the cancellation of U.S. NSA Jake Sullivan’s visit, even as the post of Indian Ambassador to Washington lies vacant, merit close examination.

Given the kerfuffle over Mr. Kejriwal’s arrest, New Delhi has a few choices: it can choose to continue this high-decibel, public and unseemly spat; it can pay the U.S. back in the same coin by commenting on its internal developments; or it can refuse to be provoked. The last option may seem the least attractive to this government, which has made a habit of pugilistic public diplomacy, but in fact would come from a place of strength and security. Global leadership, of the kind that India aspires to, requires broad shoulders, and a thick skin when it comes to criticism, along with a quiet confidence that its democratic record should speak for itself.

THE PROPHET OF PROBITY

For the majority of the tenure of independent India, the phrase “common man” evoked only one image for most Indians — a bespectacled dhoti-and-plaid-coat-clad old man with a startled expression conveying shock at the state of the new republic. The image emerged from cartoonist R.K. Lakshman’s pencil.

In the past decade or so, the common man has found a new icon in the form of Arvind Kejriwal, the *raison d’être* of Aam Aadmi Party (AAP) or the Common Man’s Party.

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



The two — the image and the man — have several similarities. At a superficial level they look alike. Mr. Kejriwal, with his short stature, dressed in loose shirts and ill-fitting trousers, carrying around a battle-weary expression, is the average Indian man. And much like Lakshman's common man, he established himself in the nation's conscience as an anti-corruption crusader. The similarities end here, however. Lakshman's image was that of a mute spectator, almost a fence-sitter who ruminates over the ills of the nation. In sharp contrast, Mr. Kejriwal emerged as an insurrectionist, who wanted to bring down the existing political system to build it anew.

The irony wasn't lost on any one. Mr. Kejriwal, who painted the political class in broad strokes with his enunciation in 2011 & 2012 — 'Sab mile hue hai' (Everyone is in cahoots) and 'Sab Chor Hai' (Everyone is a thief) — finds himself under investigations by the Enforcement Directorate (ED) in a money laundering case. On Friday evening, he was sent to the ED's remand till March 28 by the Rouse Avenue Court.

Mr. Kejriwal, born in 1968 to a middle class family in Hisar district of Haryana, holds a degree of electrical engineering from IIT-Kharagpur. He went on to work for Tata Steel in Jamshedpur. But instead of pursuing the corporate ladder, he quit to prepare for the Civil Services Examination. A 2011 profile of Mr. Kejriwal in The Caravan magazine, quotes his father as saying Mr. Kejriwal always wanted to join the IPS. But he didn't make the cut and had to settle for Indian Revenue Services.

Magsaysay Award winner

At the training course in Mussoorie, he met his future wife, Sunita, and after graduating, they both joined the Income-Tax Department in Delhi as assistant commissioners. He quit the service midway, disillusioned by all pervasive corruption around him, and became a full-time activist. In 2006, he won the Ramon Magsaysay Award for his painstaking work of exposing the leaks in the delivery of the basic government services such as the Public Distribution System.

Mr. Kejriwal, 55, hardly stuck to any one route for too long. Winning small battles working at a micro level was only the first piece of the larger puzzle he wanted to solve. In November 2010, he was one of the 10 persons who met in the basement of a church in Delhi's Gole Market to begin the India Against Corruption (IAC) movement.

Anna Hazare, a Pune-based Gandhian, was roped in as its mascot. The central piece of the IAC's campaign was a demand for an all-powerful Lokpal with the right to haul up bureaucrats and any elected representative for any act of corruption. The movement worked on the basic cynical premise that the ruling class is corrupt unless and otherwise proved.

TIMELY RESTATEMENT

A restatement of basic principles of law is always welcome, especially if there are judicial orders that seem to ignore them. The Supreme Court's recent order cautioning courts against granting pre-trial injunctions against the media in civil suits for defamation is a reminder that such orders could have severe ramifications on the freedom of speech and may impair the public's right to know. "Granting interim injunctions before the trial commences, in a cavalier manner results in the stifling of public debate," the Court observed, while setting aside a Delhi lower court order, also confirmed by the Delhi High Court, that directed news outlet Bloomberg to take down an article concerning Zee Entertainment Enterprises Ltd. within a week for being allegedly defamatory. The brief order has not only reiterated the standard three-fold test for granting



interim injunctions in general, but reminded the judicial officers that the “constitutional mandate of protecting journalistic expression cannot be understated” when it comes to cases against the media. The admonition against courts mechanically applying the three limbs of the test — whether there is a prima facie case, whether the ‘balance of convenience’ is in favour of an interim restraint, and lastly, whether not granting it will cause “irreparable loss or harm” to the plaintiff — by merely recording that these grounds have been satisfied is quite apposite. The courts granting an injunction are also expected to record reasons by analysing the facts.

However, it is with unfortunate frequency that one hears of three kinds of judicial orders that place questionable curbs on journalistic publications: outright gag orders banning any publication of information related to cases being heard by the courts, omnibus prior restraint orders against all media houses based on a plaintiff’s fear that a defamatory statement may be repeated by others and, finally, pre-trial orders to specific media houses to take down an article and refrain from further publication. Such orders will not be possible unless one ignores the common law principle in *Bonnard vs Perryman*, which lays down the standard that there can be an injunction in a defamation suit only if the court feels that the content is defamatory and that there can be no way the publication can be justified during trial, for instance by pleading the defence of truth and public interest. The latest order also contains a reminder that those with influence and economic power can resort to ‘SLAPP’ (Strategic Litigation/Lawsuit against Public Participation), a tactic often used to stifle public criticism of projects and companies. The Court has struck the right note when it warns that an early injunction in what could be a prolonged trial acts as a ‘death sentence’ against the material to be published.

BAR ON POLITICAL ACTIVITIES AS BAIL CONDITION VIOLATIVE OF RIGHTS, SC TELLS ORISSA HC

Restraining someone from taking part in political activities as a condition precedent for bail would be violative of their fundamental rights, the Supreme Court ruled.

A bench of Justices B R Gavai and Sandeep Mehta said this in its March 22 order while quashing a condition imposed by the Orissa High Court, which said “the appellant shall not create any untoward situation in public and shall not be involved in any political activities, directly or indirectly”

The HC had imposed the condition in its August 11, 2022 order while granting bail to Odisha BJP leader Siba Shankar Das. A former mayor of Berhampur, Das had joined the BJP after quitting the Biju Janata Dal (BJD).

Appealing to the HC against the August 11, 2022 order, Das’s counsel prayed that his client, being a political person who was earlier elected as Mayor of the Berhampur Municipal Corporation, may be permitted to take part in political activities in view of the ensuing elections.

KERALA GOVT GOES TO SC OVER GOVERNOR WITHHOLDING ASSENT TO BILLS: THE ISSUES AND THE LAW

The Kerala government last week approached the Supreme Court saying President Droupadi Murmu had withheld assent to four Bills passed by the state “while disclosing no reason whatsoever”, and that Governor Arif Mohammed Khan had withheld assent to seven Bills — some for as long as two years — before referring them to the President. Kerala, which is ruled by the



Left Democratic Front, urged the top court to declare the referring of state Bills to the President as “unconstitutional and lacking in good faith”.

This is the newest chapter in the conflict between states ruled by opposition parties, and their Governors, who are appointed by the President on the Centre’s advice. Over the past year, multiple states including Kerala, Tamil Nadu, Telangana and Punjab, have approached the SC about Governors withholding assent to Bills for long periods of time.

Governor’s role in lawmaking

Article 200 of the Constitution states that after a Bill has been passed by the state legislature, “it shall be presented to the Governor”. The Governor, then, has three options: give assent to the Bill, withhold assent, or reserve the Bill for consideration by the President.

For situations where assent is withheld, Article 200 states that “the Governor may, as soon as possible after the presentation to him...return the Bill...together with a message requesting that the House or Houses will reconsider the Bill or any specified provisions thereof...and if the Bill is passed again by the House or Houses with or without amendment and presented to the Governor for assent, the Governor shall not withhold assent therefrom.”

The latter part of the proviso clearly gives the state government the final say on enacting legislation. But it is the part saying “as soon as possible after the presentation to him”, which has led to states approaching the SC. Since the article does not provide a timeline, Governors have often withheld assent to Bills for extended periods, effectively leaving them, and the state legislature, in limbo.

President’s role in the process of lawmaking

In situations where a Bill is sent to the President for consideration, the President can either give or withhold assent. This is dealt with in Article 201.

If assent is withheld, the President requests the Governor to return the Bill to the state legislature for reconsideration. The state government then has six months to reconsider the Bill — failing to do so results in its lapsing.

If the Bill is passed once again by the state legislature, it must be sent back to the President who, unlike the Governor, is under no obligation to give assent when assessing the reconsidered Bill. This is the only situation in which state governments do not have the final say in their own lawmaking process.

Issues raised by Kerala

The Kerala government’s petition terms the actions of Governor Khan and President Murmu as “manifestly arbitrary”, i.e., an action that is unreasonable, irrational and which, as a result, violates the right to equality.

The petition argues that the decision to keep Bills pending violates Article 200 by not making a decision “as soon as possible”. As such, the Governor had “subverted the functioning” of the state legislature and “rendered its existence itself ineffective and otiose” (serving no practical purpose), the government has said.



On President Murmu's decision to withhold assent to four of the Bills referred to her, the Kerala government has argued that this was done without giving "any reason whatsoever". This, it claims, is in violation of Article 201, which states that the President is required to return the Bill with a message containing "such amendments as he may recommend".

Situation in other states

In November last year, the Supreme Court expressed "serious concern" at Tamil Nadu Governor R N Ravi's decision to withhold assent to 10 Bills that had been enacted by the state legislature, some of which were pending since January 2020. Three days later, all 10 Bills were returned for reconsideration, with no reasons given for the decision.

Tamil Nadu's DMK government and Governor Ravi have been at loggerheads for a long time. Most recently, the Supreme Court criticised the Governor for refusing to appoint K Ponmudy as the state's Minister for Higher Education, despite the apex court staying his criminal conviction. In its petition to the apex court regarding the Governor's alleged overreach, the Tamil Nadu government claimed that Ravi "has positioned himself as a political rival" to the state government.

The Telangana government also approached the Supreme Court in March 2023 over former Governor Tamilsai Soundarajan's refusal to give assent to 10 Bills that were passed by its legislative assembly. She gave her assent shortly after.

Nonetheless, Senior Advocate Dushyant Dave in April still pushed for the court to pass directions in the matter, telling the Bench that the "elected government is at the mercy of the Governor... Telangana is an opposition state and so this is happening".

At the time, the court refused to pass a detailed order on the subject beyond saying that the expression "as soon as possible" in Article 200 "has a significant constitutional intent and must be borne into mind".

Soundarajan is now the BJP candidate for the upcoming Lok Sabha elections from Chennai South constituency.

Question of timeline for assent

In November 2023, the SC was to decide if a Governor could withhold assent to Bills passed by the state legislature if he believed that the session where the Bills were passed were convened illegally. The Governor of Punjab, Banwarilal Purohit, had refused to give assent to four Bills passed by the Punjab Assembly, claiming that he had received legal advice that led him to believe that the Bills were passed in breach of law and procedure. However, the Bills were not remitted to the Assembly for reconsideration.

The court held that the Governor did not have the power to "thwart the normal course of lawmaking by the State Legislatures", and held that the phrase "as soon as possible" in Article 200 means that "the Governor cannot be at liberty to keep the Bill pending indefinitely without any action whatsoever."

If the Governor decides to withhold assent, he is bound to follow the procedure provided in the first proviso of Article 200, and return it to the state legislature for reconsideration, the court said.



Though the court spelled out the obligations of the Governor in the lawmaking process, it stopped short of providing a definitive timeline for the Governor to make the decision. The Kerala government has now approached the Supreme Court to address the same issue.

QUESTIONABLE CONDUCT

The conduct of the Tamil Nadu Governor, R.N. Ravi, has been constitutionally questionable for quite some time now. In the latest instance, his refusal to allow the re-induction of K. Ponmudy into the Tamil Nadu Cabinet has been exposed as unwarranted. Following some strident criticism from the Supreme Court, Mr. Ravi administered the oath of office and secrecy to Mr. Ponmudy, whose conviction in a corruption case was recently stayed by the Court, resulting in his eligibility to be a Member of the Legislative Assembly being restored. Mr. Ravi had taken the legally untenable stand that it would be against “constitutional morality” to re-induct Mr. Ponmudy based on the stay of conviction. In the Governor’s interpretation, the order of the two-judge Bench, staying the conviction recorded by the Madras High Court, was only by way of interim relief, and that it meant that the conviction was “existent, but made non-operative” and did not amount to its being set aside. The interpretation was quite questionable, as the legal consequences that flow from a criminal conviction in a corruption case — loss of eligibility for being a legislator and, therefore, for being a Minister — stand suspended as soon as the conviction is stayed. Parliament and the State legislatures restore the membership of those convicted as soon as the conviction is stayed, even if their seats had been declared vacant. The Governor’s confusion of “morality” and principles of good governance with legality seemed deliberate.

As Mr. Ravi’s propensity to find new ways to get under the skin of the DMK regime becomes more apparent, two things stand out: his reluctance to accept the limitations of his office and the Union government’s failure to act on the increasing instances of its Governors being pulled up by the Court. On an earlier occasion, the Court had noted that he had disposed of Bills pending with him only after his prolonged inaction was questioned by the Court. In the latest instance, he gave enough cause for the Court to ask, “If the Governor does not follow the Constitution, what does the State do except come to a constitutional court?” Things have come to such a pass that only a vocal court can discipline them. Given the plurality of litigation concerning the conduct of Governors, it is disconcerting that the Centre does not see any scope for remedial measures, when it ought to be its duty to replace Governors who are pathologically averse to following the Constitution. The only explanation is that their conduct is driven, not by constitutional norms, but by the political assignment given to them by those appointing them.

CAA: INITIAL EUPHORIA OVER, MATUA LEADERS IN BENGAL TELL MEMBERS TO WAIT, NOT APPLY YET

Quite like Assam’s Barak Valley where its Bengali-speaking Hindus who have migrated from Bangladesh are not rushing to register under the Citizenship (Amendment) Act, in the Matua community in West Bengal, the initial euphoria over the implementation of the legislation has given way to apprehension.

Now, Matua community leaders have issued statements asking their members to wait till the elections are over, and the confusion over the papers to be submitted is sorted. BJP leaders have reached out to Delhi saying that a clause in the rules seeking proof of residence in neighbouring Bangladesh, Afghanistan or Pakistan be done away with. And many Matua families are making frantic calls to relatives back in Bangladesh in a desperate search for the papers they might need.



Having passed the CAA in 2019, the Narendra Modi government notified the rules only on March 11, days ahead of the announcement of the Lok Sabha poll schedule.

With the BJP hoping to cash in on the Matua vote in Bengal, which is among the high-priority states for the BJP, Trinamool Congress supremo and Chief Minister Mamata Banerjee was among the first to caution the Matuas not to apply under the CAA. "I will be happy if anyone get citizenship, but the BJP is fooling people," she said. "The moment one applies for citizenship, they will be identified as intruders. After this, the NRC (National Register of Citizens) will be implemented, and these people will be sent to detention camps."

The message has hit home, among people who are used to promises drying up. On Tuesday, the Matua Mahasangha, the largest organisation of the community in Bengal, said the CAA rules notified recently need rectification, and that community members who want to apply under the CAA should wait till the formation of a new government at the Centre.

Matua Mahasangha general secretary Mahitosh Baidya told The Indian Express: "Some people tried applying on the CAA portal, but many people after getting voter and Aadhaar cards here have destroyed their documents related to Bangladesh. How can they apply now? To clear that confusion, we advised them to wait."

However, the Matua Mahasangha is itself divided into factions, with one controlled by the BJP under the leadership of Shantanu Thakur and another dominated by the TMC under the leadership of Mamatabala Thakur.

Both the factions have been accusing the other of trying to fool the people before the Lok Sabha elections.

The Matuas, who are Hindus and are considered Scheduled Castes, have been crossing the border into Bengal for a long time, before and after Partition, and then before and after the 1971 Bangladesh War.

TOXIC WORDS

Congress social media in-charge Supriya Shrinete's denigrating post on actor Kangana Ranaut, now deleted, is unconscionable. It is unacceptable that instead of apologising, her defence, through a video post, was that many people have access to her Facebook and Instagram accounts, and that someone made an "extremely inappropriate post". Ms. Ranaut, who is set to contest her maiden election from Mandi in Himachal Pradesh on a Bharatiya Janata Party (BJP) ticket, took to X to castigate Ms. Shrinete, pointing out that women must be freed from "shackles of prejudices" and no one should use the challenging lives of sex workers or their circumstances as "some kind of abuse or slur". Ms. Ranaut expressed her hurt, and a political storm has erupted over Ms. Shrinete's needless, pejorative comments ahead of a crucial general election when there are many issues at stake — from the electoral bonds scam, rising unemployment, distress of the poor, shrinking space for freedom of expression and so on. By blaming others for what appeared on her handle, Ms. Shrinete has gone against everything she vouches to stand for, particularly on women. Her colleague Pawan Khera's clarification that she "can never resort" to such talk also does not cut ice because the "objectionable language" did appear under her name.

By being on the receiving end, Ms. Ranaut too should refrain from equally disparaging remarks such as those she had made in the past against a fellow woman actor who had got an election ticket. For women, challenges persist at home and in the workplace. They face a long road to



gender equality which remains frustratingly out of reach. India finally passed a law last year to reserve 33% of seats for women legislators, but there has been no deadline set for its implementation. In the absence of such a commitment, it remains a wish on paper. The initial candidates' lists show that even the BJP, under whose watch the legislation came into place, is nowhere close to reaching the 33% mark, a key factor that can immediately have a positive outcome for women's empowerment. When the Women's Reservation Bill, 2023 was passed, about 14% of the Lok Sabha legislators were women, far below the global average of 26.5%; Himachal Pradesh has only one woman Lok Sabha MP. Women should have a voice in how their lives should be run, and becoming an elected representative is one step towards ensuring policies are made and implemented with them in mind. Women should work towards removing barriers to their advancement, not make the path more difficult.

WHO MAY VOTE FROM HOME IN LS ELECTIONS?

The story so far:

The Election Commission has extended its 'vote-from-home' facility to persons with disabilities and senior citizens aged 85 and above for the Lok Sabha elections. This move will allow more than 85 lakh senior citizens and 88.4 lakh persons with disabilities to cast their votes through postal ballots.

Who is eligible?

Efforts to make participation inclusive thus far have been contained to the polling site, with a focus on setting up ramps, separate queues, wheelchairs and parking facilities. The postal ballot-home voting facility was amended to include senior citizens and people with disabilities; the benchmark disability should be not less than 40% of the specified disability as certified by the concerned authority. "Generally the tendency has been that the senior citizens want to participate in the process and walk to the booth. But this time, we have given them options to vote in their homes," Chief Election Commissioner Rajiv Kumar said. Those who opt for it this year are not eligible to vote directly at the polling station on polling day. The scheme is also "useful" as senior voters may not prefer to step out during the summer heat, an Andhra Pradesh official told The Hindu earlier. The Lok Sabha elections will be held between April 19 and June 1, when spells of heatwaves are likely to hit most parts of the country.

Has it been tried out before?

Vote from home was previously tried out during Assembly elections in select regions, allowing people with disabilities, senior citizens and people affected by COVID-19 to avail the facility. The ECI this year has, however, increased the upper age limit of elderly voters, from 80 to 85 years. The ECI also extended the postal ballot option to media personnel covering 'polling day activities' with authorisation letters from the Election Commission, and those part of essential services such as metros, railways and health care. The option is also open for service voters, such as personnel of the armed forces posted away from their hometowns, Central Armed Police Forces personnel deployed away from home, Central and State police personnel on election duty, and polling personnel and embassy staff on postings.

How may voters avail of the facility?

The key to the process is Form 12D, which is a letter informing the Assistant Returning Officer (ARO) that the person may not be in a position to go to the polling station to vote. The form can

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



be downloaded online from the ECI website or collected from the office of the representative district officer of a parliamentary constituency. The form has to be filled and submitted within five days of notification of the polling date.

While it is a great initiative, Dr. Satendra Singh, a doctor and disability justice activist, says the policy may have to be tweaked for awareness gaps and procedural snarls. Electors are required to deposit the form to the Booth Level Officers (BLO) or the ARO, a “problematic” requirement for people with disabilities. “Ideally, if people with disability have the option to vote from home, they should be allowed to submit this form online too,” he says. Once filed, two polling officials, accompanied by a videographer and a security person, will visit the elector’s home and oversee the postal ballot voting process. The voter will receive an intimation about the date and approximate time of visit via SMS or through post. The home voting option will be attempted twice. The polling team will schedule a second visit if the elector fails to be at the given address during the first visit. During the visit, the polling team is expected to follow the protocol under the Conduct of Elections Rules, 1961. Each team of poll officers is required to (a) issue postal ballot to each of the Absentee Voters assigned to it, (b) brief the elector about the procedure to be followed for voting through postal ballot, (c) make sure that the elector votes without anyone influencing his/her choice, and ensure the secrecy of voting, according to a November 2022 communique for the vote-from-home facility. People with blindness or physical infirmity are allowed to nominate a companion and take their assistance while home voting.

What are the challenges?

Dr. Singh foresees some logistical hiccups, in coordinating requests, scheduling and moving paraphernalia around. Moreover, “do we have the machinery to fulfil this mammoth task?” he asks. The scheme will also need a “massive level of awareness generation,” both among voters and polling officers, to attune the facilities to people’s needs. The Election Commission has launched a Voter’s Guide, outlining the provisions and procedural details available to persons with disabilities and senior citizens.

TRAVELLING WITH CASH DURING POLLS? HERE ARE THE ELECTION COMMISSION RULES TO KEEP IN MIND

With the Model Code of Conduct (MCC) in force across the country since the announcement of Lok Sabha elections on March 16, law enforcement agencies are on high alert for movement of cash, liquor, jewellery and other freebies that could be used to influence voters.

Earlier this week, a video of Tamil Nadu police seizing Rs 69,400 from some tourists went viral on social media. While the money was later returned to the couple in question, the incident has brought to limelight the Election Commission’s (EC’s) stringent rules for carrying cash and other items around elections.

Measures to curb money power

Prior to every election, the EC issues detailed instructions to police, Railways, airports, the Income Tax department, and other enforcement agencies, to keep a strict vigil on the movement of cash, liquor, jewellery, drugs and gifts — anything which could be distributed during polls.

It also appoints expenditure observers for every district, alongside static surveillance teams (SST) and flying squads. The flying squads comprise a Senior Executive Magistrate as the head, a senior police officer, a videographer, and three or four armed police personnel. According to the EC, the



teams are to be provided with a dedicated vehicle, a mobile phone, a video camera, and necessary documents required for seizing cash or goods.

Surveillance teams put up checkpoints on roads, videographing the entire checking process. Their location is changed frequently to maintain an element of surprise. While checkpoints are supposed to be set up from the date of announcement of polls, the final 72 hours before polling will see enhanced enforcement.

What are the rules for carrying cash and other items?

The EC's efforts are meant to keep an eye on campaign expenditure by candidates, which is capped at Rs 95 lakh per constituency in bigger states, and Rs 75 lakh per constituency in smaller ones. However, this adversely affects citizens as well.

For instance, according to EC instructions, the CISF or police authorities at airports are supposed to "instantaneously report to the Income Tax Department" anyone carrying cash worth more than Rs.10 lakh, or more than 1 kg in bullion. The Income Tax Department then has to "make necessary verification as per the Income Tax Laws and take necessary measures if no satisfactory explanation is given." This means that cash or bullion can be seized till verification is completed, in order to ensure that it is not related to any political party or candidate.

At check-posts controlled by the surveillance teams, the EC makes it clear that "if cash of more than Rs 10 lakh is found in a vehicle, and there is no suspicion of commission of any crime or linkage to any candidate, agent or party functionary, then the SST shall not seize the cash, and [simply] pass on the information to the Income-Tax authority, for necessary action under Income Tax Laws."

However, if a vehicle carrying a candidate, or his/her agent or party worker is found with over Rs 50,000 in cash or drugs, liquor, arms, or gift items worth over Rs.10,000, then the cash or other items will be seized. If during checking, there is any suspicion of a crime, the seizure will be done under the Criminal Procedure Code (CrPC) and an FIR will be filed within 24 hours.

When it comes to carrying liquor across state borders, the excise laws of the respective state apply. For instance, some states allow two bottles of sealed liquor to be carried in.

What happens after a seizure?

In case any cash or other items are seized, authorities are meant to return them if they are not related to any candidate or a crime.

"After seizure, the seized amount shall be deposited in such manner as directed by the Court and a copy of seizure of cash, in excess of Rs 10 lacs shall be forwarded to the Income Tax authority, engaged for the purpose," the EC says.

A district-level committee will look at grievances, "in order to avoid inconvenience to the public and genuine persons". The Committee, comprising the district election office's nodal officer for expenditure monitoring, and the district treasury officer, shall suo-motu examine each case of seizure where no FIR/complaint has been filed, or where the seizure is not linked with any candidate, political party or election campaign. Moreover, it shall take immediate steps to return any cash seized, as per SoP given by the EC.



LOK SABHA ELECTIONS 2024: IN FIRST WEEK OF POLL CODE, SURROGATE ADS ON META GIVE BJP EARLY START

Between March 17 and March 23, the first week after the Election Commission of India (ECI) announced poll dates for the Lok Sabha elections, a string of advertisers on Facebook and Instagram spent more than Rs 85 lakh and placed pro-BJP ads. Separately, the BJP and its units in Andhra Pradesh and Odisha, together spent Rs 32 lakh during the week.

Of the top 20 advertisers on Facebook and Instagram during March 17-23, seven accounts ran ads favourable to the BJP — no other account in the top 20 spenders ran surrogate ads for any other political party — an analysis of Meta’s ads library by The Indian Express showed. The top 20 advertisers cumulatively spent Rs 1.38 crore during the week.

Apart from those placing surrogate ads for the ruling party, the BJP itself spent more than Rs 23 lakh (number 4 in the top 20 list) to run its promotions; the party’s state units in Andhra Pradesh and Odisha, ran ads worth over Rs 9 lakh. The Trinamool Congress (TMC) was the sixth highest political advertiser having spent more than Rs 14 lakh across two pages, and the Congress came in at number 13, spending a little over Rs 5 lakh to run ads from Rahul Gandhi’s Facebook page.

Surrogate political advertisers employ a variety of content genres, ranging from memes, cartoon strips, to clips, which are edited at times to convey information that may be misleading. The top surrogate advertisers made no disclosures on their owners linked to the party they promoted. Calls made to the telephone numbers mentioned on their Facebook pages did not yield a response.

Collectively, these advertisements garnered millions of eyeballs across Meta platforms, and despite some of these advertisements carrying communal undertones, Meta let them pass. In response to a questionnaire, a Meta spokesperson said surrogate advertisers attempting to circumvent its policies by not disclosing party affiliations are “subject to strict enforcement measures”.

As has been the case in the last two LS elections, social media is expected to become a key ground for perception battles. The Indian Express had earlier reported that political parties are experimenting with content generated through artificial intelligence (AI) including image and voice clones as part of their outreach campaign, and have already started deploying some of them on social media platforms.

Since 2018, after it was accused of being weaponised for targeting voters in the US, Meta has required that advertisers running ads related to social and political issues disclose their details to the company, with their promotional content being accompanied by a ‘paid for by’ tag under it. The idea is that an ad paid for by a political party or a candidate will have this transparency feature – a purpose which can potentially be defeated by surrogate advertisers who may not always be forthcoming about their affiliation to a party or candidate.

Detailed queries sent to the Election Commission of India, which regulates political advertisements and paid news during elections, remained unanswered until publication. “If random Facebook pages are placing ads supporting a particular party or candidate without disclosing whether they have any affiliation with them, that can also be misused to circumvent the expenditure limit on campaigning. The Election Commission needs to have some agency monitoring these political ads on social media platforms,” Anil Verma, head of the Association for Democratic Reforms (ADR) and National Election Watch, told The Indian Express.



IT IS TIME FOR COMPREHENSIVE REFORMS TO MUNICIPAL ELECTIONS

The Supreme Court judgment on the Chandigarh mayoral election gives us a good occasion to think more broadly about elections to municipalities. Elections to the Lok Sabha and State Assemblies are impressive democratic exercises in terms of timeliness of elections, the manner in which they are convened, and the clockwork nature in which power is transferred from one government to another. But elections to “first-mile” governments, i.e., panchayats and municipalities, is another matter altogether. The Court has only intervened to right one wrong in one city. A lot more remains to be done to strengthen first-mile governments in India.

The first issue with respect to municipal elections is that they are not being held on time. This is in violation of the Constitution. As per Janaagraha’s Annual Survey of India’s City-Systems 2023 study, over 1,400 municipalities did not have elected councils in place, as of September 2021.

The CAG’s audit reports of 17 States on the implementation of the 74th Constitution Amendment Act (74th CAA) observes that over 1,500 municipalities did not have elected councils in place during the audit period of 2015-2021 across States. Among larger cities, the Greater Chennai Corporation had elections in 2022 after a gap of nearly six years, and the Municipal Corporation of Delhi had elections after a delay of seven months, while the municipal corporations of Mumbai and Bengaluru are awaiting elections for over one and a half years and three years after the expiry of the term of their previous elected councils.

Second, where elections to urban local governments were held, in certain cases, councils were not constituted, and elections of mayors, deputy mayors and standing committees were delayed. In Karnataka, there was a delay of 12-24 months in the formation of elected councils after the declaration of election results in most of the 11 city corporations. As per reports, in 214 urban local governments (out of 304) in Karnataka, there was a 26-month delay in the formation of councils and election of chairpersons and standing committees for the first 2.5-year term, after election results were announced in September 2018. Further, after the expiry of the first term of 2.5 years in May 2023, the same urban local governments did not hold elections for chairpersons and standing committees for more than eight months as of 2023. The delay in Chandigarh by comparison was 12 days. Summary data on constitution of councils, and elections of mayors, deputy mayors and standing committees are not available easily.

The first challenge of holding timely elections requires determined enforcement with the Supreme Court’s intervention. Article 243U of the 74th CAA stipulates that the duration of urban local governments is five years and that an election to constitute an urban local government should be completed “before the expiry of its duration”. Further, in case of dissolution of the elected council by the State, the election should be held before the expiration of a period of six months from the date of its dissolution. Despite the Supreme Court stating in *Suresh Mahajan v. State of Madhya Pradesh (2022)* that this constitutional mandate is inviolable, State governments do not hold timely elections to urban local governments.

The second challenge is what the courts dealt with partially in the Chandigarh case. It appears to be an area that deserves greater policy attention in at least the following aspects: discretion of government officials in scheduling elections on time; possibility of the State government exercising undue influence on officials to delay elections; discretion of officials in identifying the presiding officer; possibility of conflict of interest as the presiding officer may not be independent; and the manual ballot paper-based process. A reform road map for timely, free, and fair elections is much-needed. The terms of mayors, deputy mayors and standing committees being less than



five years accentuates this challenge by necessitating frequent elections, sometimes even annually. In India, 17% of cities including five of the eight largest ones have mayoral terms less than five years. We need a standardisation of mayoral terms of five years.

To deal with these challenges, State Election Commissions (SECs) need to play a far more significant role. Articles 243K and 243ZA of the Constitution state that the superintendence, direction, and control of the preparation of the electoral rolls for, and the conduct of, all elections to panchayats and urban local governments shall be vested in SECs. Our analysis of municipal legislation across 35 States and UTs reveals that while except Meghalaya, all States have constituted SECs, only 11 have empowered them to conduct ward delimitation. The Court has emphasised that in the domain of elections to panchayats and urban local governments under Part IX and Part IXA of the Constitution, SECs enjoy the same status as the Election Commission of India.

Perhaps it is time to also evaluate a potential role for the SECs in the elections of mayors, deputy mayors and standing committees, given what happened in Chandigarh. Unlike the Lok Sabha and State Assemblies, where there is a clear distinction between the legislature and the executive, in the case of a municipality, the mayor heads both the elected and the administrative wings of the city government. Given the reluctance of State governments to strengthen SECs, perhaps it is only the Supreme Court that can bring greater salience to municipal elections.

IT'S OFFICIAL: 'STATIO SHIV SHAKTI' APPROVED AS NAME OF CHANDRAYAAN-3 LANDING SITE

The International Astronomical Union (IAU) working group for Planetary System Nomenclature has approved the name "Statio Shiv Shakti" for the landing site of Chandrayaan-3's Vikram lander. The approval was given on March 19.

Planetary nomenclature, like terrestrial nomenclature, is used to uniquely identify a feature on the surface of a planet or satellite so that it can be easily located, described, and discussed.

The Gazetteer of Planetary Nomenclature "contains detailed information about all names of topographic and albedo features on planets and satellites [and some planetary ring and ring-gap systems] that the IAU has named and approved from its founding in 1919 through the present time".

The IAU is the internationally recognised authority for assigning names to planetary surface features. It follows some rules and conventions to do so.

The IAU's Rule 9 states: "No names having political, military or religious significance may be used, except for names of political figures prior to the 19th century." The citation in the gazetteer for the name of the landing site of the Vikram lander reads: "Compound word from Indian mythology that depicts the masculine ["Shiva"] and feminine ["Shakti"] duality of nature."

On August 26, 2023, Prime Minister Narendra Modi announced that the point where the moon lander of Chandrayaan-3 touched down would be called "Shiv Shakti".

"In Shiv, there is a resolution for the welfare of humanity and Shakti gives us the strength to fulfil those resolutions," Mr. Modi had said while announcing the name.



DIGITAL FINANCIAL FRAUDS IN INDIA: A CALL FOR IMPROVED INVESTIGATION STRATEGIES

Cybercrime poses a burgeoning threat in India, impacting millions of individuals and organisations. According to the National Crime Records Bureau (NCRB), cybercrimes in India in 2023 resulted in a staggering loss of ₹66.66 crore, with 4,850 reported cases. A recent report by the Indian Cybercrime Coordination Centre (I4C) revealed that digital financial frauds accounted for a staggering ₹1.25 lakh crore over the last three years. According to the National Cybercrime Reporting Portal (NCRP), in 2023, at least ₹10,319 crore was reported to be lost by victims of digital financial fraud. The Parliamentary standing committee on Finance in its report on “cyber security and rising incidents of cyber/white collar crimes” mentioned that the domestic fraud as reported by the SE (Supervising Entities) in FY’23 was ₹2537.35 crore. According to the report, the number of complaints received in 2023 alone was 6.94 lakh.

Some of the problems faced during investigations are highlighted here with solutions for both prevention and detection of online financial frauds.

How digital frauds work

While various names have been given to diverse types of frauds, the general modus operandi of a fraudster is any one of the following: (a) convincing the victim to send money, either by impersonation (fake WhatsApp/FB/Insta, social media profiles) or by giving them a false promise of greater return (investment, crypto, held up custom package etc.)

(b) by taking credentials such as Unified Payments Interface ID (UPI), Personal Identification Number (PIN), One-Time Password (OTP) or Internet banking ID/password from the victim and then using the same on other apps/websites and transferring money without the knowledge of the victim. For this the customer will either be given a fake link which looks exactly like a UPI app screen/banking website or the victim will be conned into installing a screen sharing app. The scammers can also convince the victims over phone to give out those details. When these details are used on official banking apps this gives the fraudsters access to even the Fixed Deposits/Recurring Deposits which are also siphoned out in most cases.

(c) by taking card details and convincing the victim to share OTP.

After the scam

After a fraudster empties a victim’s bank account, the money undergoes a series of circulations in broadly three stages. The first stage is a temporary account into which the fraudsters transfer victims’ money. This account will be used to receive money from various other victims as well. From here, the money is then transferred into a second stage account. The second category of accounts are a group of accounts among which money is circulated. There are a lot of middlemen who are money circulators. Their task is only to receive money from first level bank accounts for a nominal cut. The victim’s money is then split into small parts and then circulated within these accounts, by a person who is sitting in a different corner of the country. After sufficient churning, the money is then transferred into a third stage account which is a sink account. This can be a bank account, an e-wallet etc. Here, the total defrauded amount from a group of victims is re-collected. The money is then withdrawn in a large chunk through conventional methods of either ATMs/cheques or e-wallet cash outlets such as an e-wallet payments bank.



How can frauds be prevented

Most frauds can be prevented with some basic technological interventions:

As a first, just as how Google accounts do not allow logging in from a new device unless permission is granted by the former, financial institutions must be mandated to replicate this feature in their apps. As soon as a UPI ID, password or OTP is entered in a different device, an alert must be generated in a previous device with no further action being allowed until it is approved by the person. Secondly, the screen share facility must be disabled. Banking and financial apps must disable screen-sharing to run on top of them. And finally, in the bank statement, all banks/NBFCs/SEs must be mandated to provide comprehensible data. Currently only partly printed numbers are shown which even knowledgeable customers are unable to understand. The transaction description must contain the receiver's account/mobile or any other identifying number irrespective of it being within the same bank or to an outside bank.

One of the biggest hindrances law enforcement agencies face is in following the money trail. The siphoned off money hops across bank accounts and wallets within minutes but supervised entities/banks/NBFCs/wallets are not able to give the required details to agencies with the same speed. Most of the crime is reported after 24 hours of the commission. Due to stress and trauma most victims end up deleting much of the evidence from their devices/phones. By the time a money trail is established the money is already withdrawn from the system and there is no way to either identify the person or recover the money.

Speeding up information access

Certain basic changes to the form of data provided to enforcement agencies can help in minimising delays:

(a) the banks/NBFCs/SEs must be mandated to provide data in a predetermined format with all the terms explained. The data must be given in a CSV or XLSX file. For example, the CDR (Call Data Record) shared to enforcement agencies has a fixed format and fixed file types, such as .CSV or .XLSX. Currently the banks give the statement either in a printed hardcopy or in PDF format. This causes huge inconveniences to the investigating officers. Most tech-savvy officers are often held back only because they do not get the data in a usable format. (b) The International Mobile Equipment Identity (IMEI) must be recorded. All banking and financial apps must be mandated to save IMEI details of the device being used. Fraudsters use fake mobile numbers and fake bank accounts which span across different States with the goal of adding layers to increase anonymity and preventing agencies from prosecuting them. Thus, the IMEI becomes crucial evidence in determining the device and its location. Recording IMEI will make for stronger evidence in establishing a device and its connection to fraudsters in a court of law.

The road ahead

The Bharatiya Nagarik Suraksha Sanhita 2023 which is set to replace the Indian Penal Code of 1861, recognises 'organised crime' as a "continuous unlawful activity". Digital financial frauds are very much covered in this definition. Law enforcement agencies face a lot of difficulties in conducting interstate raids and arrests. It requires a large team and coordinated effort. Interstate digital financial fraud networks must be recognised as a serious crime and bail may be restricted by the Courts. Additionally, digital frauds create a considerable amount of black money when seen from a macro-economic perspective. In conclusion, cybercrime being a subset of crime in general can be dealt like conventional offences, albeit with a different set of tools. Instead of a specialised



unit, if the fintech and telecom industries are mandated to take certain preventive steps in their technology and provide data in a manner which enables speedier investigation, the prevention, detection, recovery and conviction will be much more effective. Faster availability of data will make it easier to identify and convict pan-Indian gangs.

MEASURING INTERNET FREEDOM IN INDIA IN THE LAST 10 YEARS

The story so far:

For five straight years, India has topped the global list of countries imposing internet bans, with about 60% of all blackouts recorded in the world, between 2016 and 2022 having been in India. State imposed shutdowns in the last decade have cited national security and threats to public order. However, rights groups have argued that these shutdowns also violate court directives.

Internet shutdowns

The Indian government imposed a total of 780 shutdowns between January 1, 2014, and December 31, 2023, according to data collected by the Software Freedom Law Centre (SFLC). Shutdowns flared up during the protests against the Citizenship Amendment Act in 2019, the abrogation of Article 370 in 2019, and the introduction of Farm Bills in 2020. Internet disruptions in India accounted for more than 70% of the total loss to the global economy in 2020. Data shows India shut down the internet for over 7,000 hours in 2023.

Indian States and Union Territories can impose an internet shutdown only in case of a “public emergency” or in the interest of “public safety”, according to the Indian Telegraph Act. However, the law does not define what qualifies as an emergency or safety issue. The Supreme Court, in the landmark *Anuradha Bhasin v. Union of India* case, reiterated that internet shutdowns violate fundamental rights to freedom of expression and shutdowns lasting indefinitely are unconstitutional. Moreover, Courts have asked governments to make shutdown orders public, a provision poorly complied with, experts have noted.

British-era law

Regionally, Jammu and Kashmir saw the highest number of shutdowns — at 433 — in the last 12 years. The longest blackout in 2023 took place in Manipur from May to December, amid ethnic clashes.

As of February 15 this year, internet shutdowns were active in Haryana amid the farmers’ protests.

The Union government invoked powers under a British-era law to suspend mobile internet as Punjab farmers are holding protests in Delhi.

Activists have pointed out that India failed to meet the ‘three-part test’ in imposing blackouts in J&K and Manipur. Under international law, to block any access to content or invoke coercive measures that violate people’s fundamental rights, countries should check if the action is provided for by law; pursues a legitimate aim; and follows standards of necessity and proportionality. The majority of internet outages in the last decade were localised to specific districts, cities and villages.

The trends differ globally: protests are the most common reason for internet shutdowns, followed by information control and political instability.



Between 2015 and 2022, more than 55,000 websites were blocked, according to SFLC data. The biggest share of content censored was done under section 69A of the IT Act, by the Ministry of Electronics and Information Technology and the Ministry of Information and Broadcasting. URLs were blocked due to links to organisations banned under the Unlawful Activities (Prevention) Act. Recently, the Ministry ordered news outlet The Caravan to take down a story which alleged abuse, torture, and murder of civilians by the Indian Army in Jammu's Poonch district.

On social media, almost 30,000 social media URLs (including accounts and posts) were blocked between 2018 and 2022, with the majority of requests sent to X. A commonly cited reason for blocking websites is the escalating threat of cybercrime. As compared to 5,693 cases in 2013, India recorded more than 65,000 cases last year. Cases have risen by almost 434% between 2016 and 2022, according to the National Crime Records Bureau.

India and global trends

Global Internet freedom has declined for the 13th consecutive year, and the environment for human rights online has deteriorated in 29 countries, according to the latest Freedom House report. India's ranking has hovered around the same benchmark in the last three years. This is a dip from 2016 and 2017, when India scored 59 points, to 50 points in 2023.

ON SUSTAINABLE BUILDING MATERIALS

The story so far:

India is witnessing an unprecedented construction boom, with over 3,00,000 housing units erected annually. This growth brings economic opportunities and improved living standards but also poses significant environmental challenges. The building sector, a major energy consumer, accounts for over 33% of India's electricity usage, contributing to environmental degradation and climate change. The India Cooling Action Plan forecasts an eight-fold increase in cooling demand between 2017 and 2037, emphasising the need for thermal comfort while reducing active cooling demand.

How can the construction sector become energy efficient?

Addressing energy inefficiency in residential buildings is crucial, given India's rising energy and cooling demand due to economic growth, urbanisation, heat islands, and climate change. Initiatives like the Eco-Niwas Samhita (ENS) and the Residential Energy Conservation Building Code are steps in the right direction. The ENS introduces the Residential Envelope Transmittance Value (RETV), a metric measuring heat transfer through a building's envelope. Lower RETV values lead to cooler indoor environments and decreased energy usage. For optimal efficiency, improved occupant comfort, and lower utility expenses, it's recommended to maintain an RETV of 15W/m² or less. However, current construction trends favour fast-paced, energy-intensive techniques with active cooling strategies, leading to compromises in thermal comfort. There needs to be more widespread knowledge about climate-appropriate design and architecture, with perceptions of high first costs as a barrier to the design and construction of climate-responsive buildings needing to change.

What materials are optimal?

Our analysis across four warmer climate cities in India highlighted the popularity of materials like Autoclaved Aerated Concrete (AAC) blocks, red bricks, fly ash, and monolithic concrete (Mivan).



Despite concerns about sustainability, monolithic concrete construction was favoured by building developers for its speed, strength, quality, and scalability, with over 60% of buildings under design and construction phases opting for it, especially in high-rise buildings and skyscrapers.

The RETV evaluation for these buildings revealed that AAC blocks consistently had the lowest RETV across all climatic conditions, indicating their potential as a thermally efficient material. Based on literature review, a comparison of building materials for a 100 sq. ft wall area displayed substantial differences in embodied energy (the energy associated with the manufacturing of a product), with monolithic concrete having an embodied energy 75 times greater than AAC. When considering the estimated construction time for a 100 sq. ft room, red bricks required the longest time, while Mivan construction required the least. Mivan technology offered faster construction of buildings compared to traditional masonry work, particularly for taller structures.

Sustainability concerns are prominent across all materials. Red bricks exhibit moderate embodied energy, contributing to resource depletion, emissions, and waste. While AAC blocks have lower embodied energy, they still contribute to emissions and waste. Monolithic concrete, despite its quick construction time, presents the highest embodied energy, significant environmental impact, and sustainability challenges. Hence, AAC blocks offer a better balance between embodied energy and construction time than red bricks and monolithic concrete.

What next?

India has significant untapped potential for innovative building materials. Interdisciplinary collaborations with sustainability experts to delve deeper into integrated design and optimise strategies like building orientation, Window Wall Ratio (WWR), U-value (rate of heat transfer) of walls, roofs and window assemblies, glazing performance, active cooling systems, etc., can unlock the potential for a sustainable built environment. The construction industry's preference for Mivan as a prime building material raises sustainability concerns, including high embodied carbon and thermal discomfort. Sustainable construction requires innovation from building materials manufacturers to develop cost-effective, scalable, durable, fire-resistant solutions with superior thermal performance and climate resilience. In conclusion, the journey toward sustainable construction is challenging but essential for a greener future. By re-imagining construction design and practices, manufacturing innovative walling materials, and fostering a culture of sustainability, we can create resilient and energy-efficient structures that align with environmental goals and significantly improve the quality of life for the masses.

INDIA'S BIRTH CRISIS: WHAT THE LANCET FORECAST OF FERTILITY RATE DIP TO 1.29 BY 2050 MEANS

By 2050, one in five Indians will be a senior citizen while there will be fewer younger people to take care of them. This predictive scenario has been highlighted by a Lancet study, which says that India's total fertility rate (TFR) — the average number of children born per woman — is dipping irreversibly to 1.29, far lower than the replacement rate of 2.1. This means a rapidly depleting working age population.

As per research estimates from the Global Burden of Disease, Injuries and Risk Factors Study (GBD)-2021, worldwide, too, the TFR has more than halved in the last 70 years – from around five children for each woman in 1950 to 2.2 children in 2021. In India, the TFR was 6.18 in 1950 which reduced to 4.60 in 1980 and further declined to 1.91 in 2021. China is already dealing with the



demographic disadvantage of an ageing population. India, too, is heading in that direction. These two nations together account for more than a third of the world's population.

Why fertility went down in India

Post-independence, there was a need to restrict the population. So the Family Welfare Programme, including maternal and child health-related cash transfer inducements, were intended to convince people to have no more than two children. "During that time, the system required a lot of effort to change the mindset of the Indian population. Slowly that behaviour change started showing up. Infant mortality declined substantially (because of various maternal and child health-related programmes and successful immunisation) meaning child survival was guaranteed. Small families became the norm," explains Prof Radkar.

There is an economic dimension too. With development, the inter-generational flow of wealth has reversed. "This means parents now do not receive much benefit from their children the way they used to. This has influenced their decision to have an additional child that would involve a substantial cost of bringing them up. So this fertility decline was inevitable and we were envisaging it for quite some time," says Prof Radkar.

The other significant factor has clearly been the rise of female literacy and women's participation in the workforce. Career consciousness, financial returns and economic independence have meant that women are reconsidering their options of having a second child. In the urban space, many women do not consider child-rearing as a must-do task, are instead choosing not to have babies at all and even considering options like adoption. This pattern is percolating to rural India too.

What are long-term consequences?

The consequences of fertility decline will be that the share of the elderly in the population will increase sharply. "By 2050 the share of senior citizens in India will be more than 20 per cent, that is one five people," says Dr Radkar. "This is what China is already showing signs of as a consequence of the one-child-family policy," she adds.

Poonam Muttreja, Executive Director of Population Foundation of India, foresees challenges like labour force shortages and potential social imbalances due to gender preferences. "While these challenges are still a few decades away for India, we need to start acting now with a comprehensive approach for the future. We need to learn from Scandinavian countries like Sweden and Denmark, which are dealing with these challenges by supporting new families. They are providing affordable childcare, investing in healthcare and taking on large-scale male-engagement initiatives to build gender equity. For women to be able to manage careers with motherhood, it would be crucial for men to take greater responsibility for household and care work. Economic policies that stimulate growth and job creation, alongside social security and pension reforms, will also be essential in adapting to and mitigating the impacts of declining fertility rates," she argues.

Declining trend worldwide

Researchers estimate that by 2050, 155 of 204 countries (76 per cent of the world) will be below the replacement level of fertility. The number of countries and territories below replacement level is predicted to further increase to 198 (97 per cent) by 2100. "This means that in these locations, populations will shrink unless low fertility can be offset by ethical and effective immigration," says senior author Prof Stein Emil Vollset from the Institute For Health Metrics and Evaluation (IHME).



ON THE RESURGENCE OF MUMPS IN KERALA

The story so far:

Mumps, an acute viral infection which historically affects children, has been spreading like wildfire in Kerala, for the past few months. Not just Kerala, a resurgence in cases was being reported from several States, including Maharashtra, Telangana and Andhra Pradesh as well. Cases which began appearing sporadically around November 2023 in the Malappuram and Kozhikode districts of Kerala, have since then spread to Palakkad and Thrissur too, resulting in major community outbreaks. The case tally this year alone has reached 15,637, as on March 22, with 6,675 cases being reported this month. Such an uncontrolled surge in cases could lead to an increase in the number of complications of mumps, like meningoencephalitis or pancreatitis, public health experts fear.

Is it a cause for concern?

Mumps is a self-limiting, airborne viral disease and presents as fever and headache in mostly children and adolescents, with painful swelling of the salivary glands (parotid glands) on both sides of the face. There is no specific treatment and the patient recovers with rest and symptomatic management in about two weeks. With only half of the infected children developing the classical disease and close to 30% remaining asymptomatic, cases mostly go unreported, indicating that the reported cases are a gross underestimation of the actual cases in the community.

From the view point of public health, measles, which can cause significant morbidity and mortality, has always been considered a priority, rather than mumps. However, with cases being reported in epidemic proportions, several cases arising from the complications of mumps like encephalitis, epilepsy, aseptic meningitis and acute pancreatitis, have been reported at Kozhikode Medical College hospital. The other significant complication brought forth by mumps is the virus's effect on the gonads (reproductive glands) in both males and females. In males, it presents the rare yet distinct possibility of infertility or a drop in sperm count in the long term.

Why is the mumps vaccine not part of the national immunisation schedule?

Despite being a vaccine-preventable disease, mumps has never been a part of the Universal Immunisation Programme (UIP) because of the disease's no-mortality profile and the perception that it has low public health significance. However, the Indian Academy of Paediatrics (IAP) has always maintained that the public health significance of mumps has been underestimated mainly because of the poor documentation of clinical cases, its complications and patients' follow-up data as well as the lack of published studies. There is no nationally representative data on incidence of the disease. There is very little information on the actual long-term morbidity profile of the disease, even though the disease is known to have some impact on reproductive organs.

How can the current outbreaks be controlled?

Health officials maintain that creating public awareness about the disease and the importance of isolation is the most important tool in bringing down the transmission of the disease. Mumps is primarily being reported in un-immunised children and adolescents and hence improving general immunisation cover is important. Transmission of the disease begins before the symptoms actually manifest and isolation of the patient for a full three weeks is necessary to limit the spread of the disease.



Health officials reckon that one of the reasons for the large number of school-based outbreaks in Kerala is because children were allowed back to school as soon as there was symptomatic relief, before the three weeks isolation period was up. They hope that there will be a break in transmission and a drop in new cases once schools close for the summer break.

What should be the strategy ahead?

According to the World Health Organization (WHO), vaccination strategies targeting mumps control should be closely integrated with existing measles elimination and rubella control.

The IAP for one, has always advocated the use of MMR (Mumps-Measles-Rubella) vaccine in UIP, which has been available in the private sector for a long time. There are no studies from India on the effectiveness of the mumps vaccine. But globally, the protection from two doses is estimated to be between 70-95%, if the coverage is high.

In 2014, Kerala, as part of its own initiative to protect children from Rubella, had replaced the second dose of measles vaccination given at 18 months to infants in UIP, with MMR. However, in 2017, when the Centre introduced Rubella vaccine in the UIP, replacing the two doses of measles given at nine months and 15 months with the MR vaccine (Measles-Rubella), Kerala also followed suit. Kerala has now written to the Centre on the mumps resurgence happening in the State and the need to replace MR vaccine in the UIP with MMR vaccine.

BHARAT BIOTECH COMMENCES CLINICAL TRIALS OF SPANISH TUBERCULOSIS VACCINE IN INDIA

Vaccine maker Bharat Biotech is conducting the trials in partnership with Spanish biopharmaceutical company Biofabri which is responsible for clinical and industrial development of the vaccine “developed in the laboratory of the University of Zaragoza, with Dr. Brigitte Gicquel of the Pasteur Institute, Paris”.

MTBVAC is the only vaccine against tuberculosis undergoing clinical trials based on a genetically modified form of Mycobacterium tuberculosis, the pathogen that causes the disease. Unlike the BCG vaccine, the new vaccine contains all “the antigens present in strains that infect humans”. While trials to evaluate safety and immunogenicity of MTBVAC in India have begun, a pivotal safety, immunogenicity and efficacy trial is planned in 2025, Bharat Biotech said in an announcement coinciding with World Tuberculosis Day.

Bharat Biotech will be conducting a Phase 3 trial as Biofabri has completed the Phase 1 and 2 trials in other countries, a spokesperson said. “The MTBVAC vaccine has passed several milestones before entering clinical trials in India,” executive chairman Krishna Ella said in a release.

Studying the safety, immunogenicity and efficacy of the vaccine in the most populated country and the one with the highest number of cases of the infectious disease is key to continue advancing this vaccine.

MTBVAC has been developed to be a more effective and potentially longer-lasting vaccine than BCG for newborns and for prevention of TB in adults and adolescents, for whom there is currently no effective vaccine, the Hyderabad-based company said. “It is a giant step to test in adults and adolescents in the country where 28% of the world’s TB cases accumulate,” Biofabri CEO Esteban Rodriguez said.



BCG is an attenuated variant of the bovine TB pathogen and more than a hundred years old with a limited effect on pulmonary tuberculosis that is responsible for the transmission of the disease, he said.

EXPRESS VIEW: TAKING ON TB

A major challenge for any country's TB elimination programme is to make sure that cases are reported. A patient falling outside the screening and treatment network is not only harmful to the individual concerned, it also exposes her contacts to the risk of infection.

Under-reporting of cases has, for long, been a major hurdle for India's anti-TB programme. It's, therefore, assuring that the latest factsheet on the disease in the country, the India TB Report 2024, shows that the gap between the estimated number and actual TB cases is closing. India has attained its 2023 target of initiating treatment in 95 per cent of patients diagnosed with the infection.

The government has set an ambitious target to eliminate the disease in the country by next year. Despite the anti-TB programme's appreciable success in the past two years, the country does not seem to be on course to attain this target. The disease's multi-drug resistant (MDR) version has assumed epidemic proportions.

The latest India TB Report shows significant progress in charting this severe version of the disease. Close to 60 per cent of those diagnosed were offered a test to check whether their infection was resistant to the first-line drugs, an increase from 25 per cent in 2015.

In the coming months, the health authorities should reach out to more patients to ascertain the numbers of those whose illness requires the administration of second-line drugs.

In recent years, experts have been recommending the use of molecular testing because microscopy cannot detect all MDR cases. But by all accounts, this state-of-the-art diagnostics is still not the predominant testing method in the country.

Although several drug regimens are available for MDR-TB, these are demanding on patients. A growing body of scholarship shows that less than 60 per cent of patients who require a second-line treatment complete the full course of medicines. Experts, therefore, suggest a transition to the short-duration drug, bedaquiline.

India's patent office's decision, last year, to not renew Johnson and Johnson's copyright on this drug should enable the domestic industry to step in and develop cheaper generic versions. In recent years, mental healthcare has increasingly been seen as a critical part of TB treatment and epidemiologists have been advising physicians to handhold patients through the exacting therapy — this rarely happens in the country. Though TB can affect all social classes, records show that the poor, slum dwellers, and HIV/AIDS patients are the most affected. In the coming months, the country's planners should deploy a combination of state of the art technology and humane methods to build on the gains of last year.

TO CURB ILLEGAL TRADE, HEALTH MINISTRY TELLS STATES TO PLUG GAPS IN COMPILING DATA OF ORGAN DONORS

In an advisory to all States recently, the Health Ministry noted that the National Organ and Tissue Transplant Organisation (NOTTO), established under the Transplantation of Human Organs and

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Tissues Act (THOTA), 1994, was an apex organisation to provide for an efficient and organised system of organ procurement and distribution in the country and maintain a national registry of donors and recipients of organs and tissues, sources in the Transplant Authority of Tamil Nadu said. To fulfil the mandate, the hospitals carrying out organ and tissue transplantation, retrieval, or tissue banking were required to link with the NOTTO and provide both living and deceased organ and tissue donation and transplantation data for the National Registry.

However, it was observed that data were either incomplete or not provided by the States. Also, some States did not have a system for collecting living donor data.

The Ministry asked State Health Secretaries to instruct all licensed or registered transplant hospitals (Organ Transplant, Non-Transplant Retrieval Centres, and Tissue Banks) to get linked up with the NOTTO web portal.

Every transplanting hospital needed to register patients requiring transplants in the 'subject demography format' as available on the NOTTO web portal and update their status.

The advisory said that it was essential that the data were updated online on a regular basis and monthly offline reports related to deceased as well as living donors were required to be compiled, verified and provided to the NOTTO.

The State Appropriate Authority, which had the powers of a civil court under the Act, was told to ensure compliance with the provision of data by the hospitals for the National Registry.

Non-compliance to the instructions should be dealt with by the authorities under the provisions of the THOTA, 1994.

Robust registry

The Ministry said a robust National Registry was "absolutely essential for better programme implementation and monitoring with the objective to prevent possible commercial dealings in organs and also to promote deceased organ donation," the sources quoted the advisory as saying. It was also desirable that every transplant hospital, whether public or private, promoted deceased organ donation and made efforts to achieve a minimum number of donations annually for which they would be required to establish a system for brain stem death certification and its monitoring, and facility for deceased organ donor maintenance.

The advisory comes after the NOTTO issued a series of instructions to curb allegations of organs harvested from brain dead patients being transplanted on foreign nationals, overlooking deserving Indian patients on the waitlist.

Going by data, 16,041 organs were transplanted in 2022, most of which were kidneys and livers, harvested from live and cadaver donors. Delhi topped the list with 3,818 organ transplants, the sources added.

ANAEMIA PREVALENCE IN EIGHT STATES FOUND TO BE OVERESTIMATED

A study across eight States in India involving 4,613 participants that included adolescents (647 girls and 674 boys), adults (931 women and 927 men) and elderly (714 women and 720 men) has found that prevalence of anaemia has been overestimated by previous surveys. While the NFHS surveys measured haemoglobin using finger prick-based capillary blood, the latest multi-



institutional study carried out by a team led by Dr. Anura Kurpad from St. John's Medical College, Bengaluru, used venous blood to measure haemoglobin and iron status through ferritin.

Capillary blood haemoglobin will be an underestimate of the true value as the red blood cell count in the capillary blood will be a little lower than venous blood due to a phenomenon called plasma-skimming. Also, tissue fluid gets mixed with capillary blood while drawing the blood sample leading to dilution and thus a reduction in haemoglobin value.

The study found that anaemia prevalence was predominantly of the mild variety. Overall, 18.4% of the entire sample were mildly anaemic, 14.7% were moderately and 1.8% were severely anaemic. As expected, the overall prevalence of anaemia was higher in women compared with men. The prevalence of moderate anaemia was significantly higher in women (22%) compared with men (7.6%). Anaemia prevalence was 44%, 41% and 45% in adolescent girls, adults and elderly women, respectively. In the case of adolescent boys, adults, and elderly men, anaemia prevalence was 24%, 21% and 37%, respectively.

In comparison, the prevalence of anaemia was much higher as per the NFHS surveys that used capillary blood— 60.8% for women, 62.6% for adolescent girls, 26% for men and 31.8% for adolescent boys.

As per the present study, the prevalence of total anaemia was very high in the state of Assam (69.8% overall; 78.3% for women) followed by Odisha (55% overall; 63% for women). At 12.1% overall and 14.6% for women, Meghalaya had the least anaemia prevalence, followed by Telangana (16.9% overall; 24.6% for women), West Bengal (19.5% overall; 28% for women), Tamil Nadu (23.7% overall; 32.4% for women), Gujarat (33.9% overall; 44.2% for women), and Madhya Pradesh (45.4% overall; 55.9% for women).

Interestingly, the prevalence of iron deficiency for the whole group was just 18.4%. The prevalence of iron deficiency was 16.0%, 10.7% and 11.2% for adolescent boys, adults, and elderly men, respectively. Even among anaemic women (42.6% with all grades of anaemia), only about a third was due to iron deficiency. Among elderly women (40.9% with all grades of anaemia), only about a fifth had iron deficiency. Only in the case of adolescent girls did anaemia due to iron deficiency become relatively high at 45%. The major proportion of anaemia in all groups was associated with 'unknown causes'.

Even in the case of Assam where the prevalence of anaemia was highest (69.8% overall; 78.3% for women), iron deficiency was only 12.3% overall and 18.9% in women. In the case of Tamil Nadu where the prevalence of anaemia was 23.7% overall and 32.4% for women, iron deficiency was rather high at 22.8% overall and 38.2% in women. Interestingly, while Assam had the highest prevalence of anaemia (69.8% overall) and Meghalaya had the least anaemia prevalence at 12.1% overall, iron deficiency as a driver of anaemia was comparable and low in both States — Assam (12.3% overall) and Meghalaya (12.6% overall). "Only one-fourth of 42% of women with anaemia were due to iron deficiency. Yet, everybody assumes that iron deficiency is the main cause of anaemia in India," says Dr. Kurpad. "Though anaemia is caused by multiple factors including vitamin B12 and folate deficiency, and inflammation, the focus has primarily been only on iron deficiency."

Dr. Kurpad stresses that policies to provide iron supplementation for the entire population of India have to be reconsidered, particularly due to the dangers of excess iron intake. "It is not easy to excrete iron, and too much iron can cause oxidative stress on all organs," he cautions. "The focus



should also be on reducing inflammation, which is best achieved naturally through increased consumption of fruits and diversity in diet to improve the intake of all nutrients,” he says.

“Due to climate change, the protein, vitamin and mineral content in cereals is dropping,” he says. “It’s time we diversify from cereals to millets which are more resilient. Though phytates in millets can reduce absorption, millets contain higher amounts of iron and calcium leading to increased net intake.”

ICCC: GOVT’S INTEGRATED FARM DATA DASHBOARD FOR CUSTOMISED SOLUTIONS

Earlier this month, Agriculture Minister Arjun Munda inaugurated a Krishi Integrated Command and Control Centre (ICCC) set up at Krishi Bhavan in New Delhi, a big-screen dashboard of all digital innovations in the sector. Officials described the ICCC as a “significant leap forward” in leveraging technology for the advancement of agricultural practices.

What is the Krishi ICCC?

The ICCC is a tech-based solution involving multiple IT applications and platforms, which is designed to help in making informed decisions. The centre is housed in the Ministry of Agriculture & Farmers’ Welfare, which is responsible for legislation, policy formation, and implementation of initiatives in the agriculture sector.

The ICCC uses state of the art technologies such as artificial intelligence, remote sensing, and Geographic Information Systems (GIS) to collect and process large amounts of granular data — on temperatures, rainfall, wind speed, crop yields and production estimations — and presents it in graphical format.

What do you get as the visual output?

On eight large, 55-inch LED screens installed at the ICCC, you can see information on crop yields, production, drought situation, cropping patterns (geographic region-wise and year-wise) in map, timeline, and drill-down views.

You can also see the relevant trends (periodic and non-periodic), outliers, and Key Performance Indicators (KPIs), and receive insights, alerts, and feedback on agriculture schemes, programmes, projects, and initiatives.

krishi iccc. Practical applications of Krishi ICCC.

The ICCC uses platforms including the Krishi Decision Support System (DSS) to collect micro-level data, process it, and present the macro picture.

The ICCC has a contact centre and a helpdesk facility, with the operator’s handset capable of being converted into a call centre. If needed, farmer beneficiaries can interact directly with officials or the Minister through video conferencing facilities.

What is the objective of the ICCC?

The ICCC will enable comprehensive monitoring of the farm sector by making available at one place geospatial information received from multiple sources, including remote sensing; plot-level data received through soil survey; weather data from the India Meteorological Department (IMD); sowing data from Digital Crop Survey; farmer- and farm-related data from Krishi MApper, an



application for geo-fencing and geo-tagging of land; market intelligence information from the Unified Portal for Agricultural Statistics (UPAg); and yield estimation data from the General Crop Estimation Survey (GCES).

The integrated visualisation of the data will enable quick and efficient decision-making by the The ICCC ecosystem can be linked with the PM-Kisan chatbot going forward.

Can the command and control centre generate individual farmer-specific advisories?

Going forward, the ICCC can create an ecosystem based on which individual farmer-level advisories can be generated through apps like Kisan e-mitra, a chatbot developed for PM-Kisan beneficiaries.

The AI-/ machine learning-based system will identify a farmer through his/ her mobile number or Aadhaar, and match it with the farmer's field information obtain through land records, historical crop sowing information from the crop registry, weather data from IMD, etc. It will then generate a customised advisory in the local language of the farmer. For this, the system will use the Bhashini platform that allows translation into several Indian languages.

WHY PAKISTAN'S 'PIRACY' OF INDIAN BASMATI RICE VARIETIES IS CONCERNING

Scientists at the Indian Agricultural Research Institute (IARI) and exporters have red-flagged the "illegal" cultivation of its improved basmati rice varieties in Pakistan. The issue came to the fore after the emergence of promotional YouTube videos, featuring recently-released IARI varieties, by Pakistani seed firms in places such as Multan, Bahawalnagar and Hafizabad. Here is why this is a problem, and what India should do to address it.

But first, how have India's basmati exports fared of late?

Quite well. India's overall merchandise exports have dipped by 5%, from \$372.1 billion in April-January 2022-23 to \$353.6 billion in April-January 2023-24. So have agricultural produce exports, by 9.7%, from \$43.4 billion to \$39.2 billion for this corresponding period.

But the same period has seen basmati rice exports bucking the trend and posting a 20.2% jump in dollar value and 12.3% in quantity terms. If current trends hold, the fiscal year ending March 2024 could see basmati shipments of close to 50 lakh tonnes (lt), valued at \$5.5 billion (or Rs 45,550 crore). These would be all-time-highs.

Basmati exports boomed even as export of non-basmati rice has slid. The current fiscal may end up with non-basmati rice exports of just under 110 lt worth \$4.4 billion, way below the record 178 lt, and \$6.4 billion achieved in 2022-23. This shouldn't surprise, as the Centre has banned exports of all white non-basmati rice. Only parboiled non-basmati shipments are being permitted now, that too while being subjected to a 20% duty.

So, what exactly is the 'neighbourhood threat' that's being talked about?

The threat relates to the alleged seed piracy and unlawful cultivation in Pakistan of improved high-yielding varieties of basmati rice developed by IARI. Note: *CSR-30, HBC-19 and Basmati-370; **Includes Sharbati and Sugandha.

The New Delhi-based institute's varieties covered nearly 89% of India's estimated 2.1 million hectares cultivating the aromatic cereal crop in the 2023 season. Known by the Pusa Basmati (PB)



label, these varieties also have an over-90% share of the country's \$5-5.5 billion annual basmati exports.

What is so special about the IARI-bred varieties?

Traditional tall basmati varieties — the likes of Taraori (HBC-19), Dehraduni (Type-3), CSR-30 and Basmati-370 — were low-yielding, producing barely 10 quintals of paddy (rice with husk) per acre over 155-160 days from nursery sowing to harvesting. IARI varieties, having shorter plant heights, yield more grain, and in less number of days.

The first IARI variety — PB-1, released for commercial cultivation in 1989 — yielded 25-26 quintals/acre and matured in 135-140 days.

PB-1121, released in 2003, yielded less (20-21 quintals) with slightly longer maturity (140-145 days). Its USP was the grain quality — an average kernel length of 8 mm (versus 7.2-7.4 mm for Taraori and PB-1) that elongated to 21.5 mm (versus 14-14.75 mm) on cooking.

This was followed by PB-6 (a cross of PB-1 and PB-1121, released in 2010) and PB-1509 (2013). The last one yielded as much as PB-1, but with a seed-to-grain duration of just 115-120 days. IARI subsequently also unveiled improved versions of PB-1121 (PB-1718 and PB-1885), PB-1509 (PB-1692 and PB-1847) and PB-6 (PB-1886), incorporating genes conferring resistance to bacterial blight and rice blast fungal disease.

PB-1121 was “released” in Pakistan in 2013 — as PK-1121 Aromatic variety, and marketed as Kainat 1121 Basmati ('Kainat' being Urdu for 'cosmos'). PB-1509 was, likewise, registered and renamed as Kissan Basmati in 2016. More recent are YouTube videos of Pakistani seed companies and so-called research farms and agro consultants, discussing new IARI varieties — including PB-1847, PB-1885 and PB-1886, which were notified under India's Seeds Act only in January 2022. It is the surfacing of these videos that alerted the authorities in India, especially IARI scientists.

Is this concerning?

On the face of it, not much. Pakistan's basmati exports fell from 7.58 lt (valued at \$694.55 million) in 2021-22 to 5.95 lt (\$650.42 million) in 2022-23. Although exports during July-February 2023-24, at 4.72 lt (\$539.43 million), were higher compared to 3.66 lt (\$386.88 million) in July-February 2022-23, the numbers are a fraction of India's.

That said, India still has multiple reasons to be concerned.

To start with, basmati rice is grown only in India and Pakistan. Pakistan predominantly exports Super Basmati, a high-yielding variety (similar to IARI's PB-1) bred by the Rice Research Institute at Kala Shah Kaku, near Lahore. This variety, released in 1996, has helped Pakistan gain a 66-70% share in the European Union-United Kingdom market for brown (unpolished/husked) basmati rice. That share has further gone up to 85% in the new marketing year from September 2023.

Moreover, while India is a clear market leader in Saudi Arabia, Iran, Iraq, United Arab Emirates and other West Asian countries, it has largely to do with consumer preference there for parboiled basmati rice. This rice — where paddy is soaked in water and partially boiled in the husk before milling — has harder grains, less susceptible to breakage after cooking for long than regular white rice. But with Pakistan mills increasingly adopting parboiling technology — and its farmers planting superior IARI basmati varieties — there could be challenges going forward.



A weak Pakistani currency (Rs 279 to the US dollar, against India's Rs 83.5) only adds to its competitive advantage.

What should India do?

India enacted the Protection of Plant Varieties and Farmers' Rights Act in 2001. The IARI-bred improved basmati varieties are all registered under this Act, which allows only Indian farmers to sow, save, re-sow, exchange, or share the seed/grain produced from them. However, even they cannot violate the rights of the breeder — in this case, IARI — by selling the seeds of the protected varieties in branded (packaged and labelled) form.

Moreover, the IARI varieties are notified under the Seeds Act, 1996, which allows their cultivation only in the officially demarcated Geographical Indication (GI) area of basmati rice within India. This covers seven states: Punjab, Haryana, Himachal Pradesh, Delhi, Uttarakhand, Uttar Pradesh (west) and two districts of Jammu & Kashmir (Jammu and Kathua).

The sale of seeds and cultivation of the above protected basmati varieties in Pakistan would arguably qualify as an intellectual property rights (IPR) violation, which India can raise in relevant bilateral forums and at the World Trade Organisation.

STUDY UNRAVELS THE RECIPE THAT GIVES KASHMIRI RICE VARIETY UNIQUE AROMA

The Kashmir Himalayas are known for the cultivation of mushk budiji, an indigenous rice variety distinguished by its rich aroma and unique taste. Recently, scientists at the Sher-e-Kashmir University of Agricultural Sciences and Technology (SKUAST), Srinagar, reported that altitude and temperature play an important role in the development of this aroma.

In a study recently published in Nature Scientific Reports, they have reported identifying around 35 aromatic compounds in the variety at altitudes between 5,000 and 7,000 feet across the valley.

Mushk budiji was on the verge of extinction for some time due to various factors. Chief among them was the prevalence of rice blast disease, its low yield, and lack of profitability. But a revival programme launched in 2007 by SKUAST scientists saw the crop make a slow comeback.

Gaurav Zinta, senior scientist at the CSIR-Institute of Himalayan Bioresource Technology in Palampur, Himachal Pradesh, said the study "serves as a foundational work to understand the intricate relationship between altitude and aroma development in an indigenous rice variety." He wasn't involved in the study.

GC-MS and e-nose

"Surprisingly, there hasn't been any comprehensive study conducted to determine the most suitable locations for the cultivation of mushk budiji," Syed Zameer Hussain, professor and head of the Division of Food Science and Technology, SKUAST and corresponding author of the study, said. "Motivated by this gap in knowledge, we decided to conduct a study of selected locations on the flavour profile of mushk budiji using gas chromatography-mass spectroscopy (GC-MS) and an 'electronic nose'." These locations spanned Kupwara near the region's northern edge to Khudwani in Anantnag in the south.

GC-MS is an analytical method used to reveal the presence of volatile compounds present in organic mixtures extracted from geological, environmental, and biological samples. The e-nose is



a tool fit with various sensors as well as an artificial intelligence (AI) component; it assessed the flavour attributes of rice samples.

Based on these studies, the scientists identified 35 volatile organic compounds (VOCs) in mushk budiji rice samples. Of these, the concentration of aldehydes (molecules containing the functional group -CH=O) ranged from 6.33% to 29.09% and alcohols (-OH) from 0.47% to 30.34%. According to Ufaq Fayaz, the lead author of the study and research scholar at SKUAST, 2-acetyl-1-pyrroline (2-AP) is a known aromatic compound found in some varieties – but it was present only in mushk budiji samples collected from higher altitudes, particularly in the districts of Budgam and Kupwara.

Dr. Hussain also said 2-AP wasn't the only compound that contributed to mushk budiji's distinct aroma. The team found this through the e-nose analysis of samples from locations that lacked the presence of 2-AP. This, according to him, is "contrary to common perception".

A genetic component

The team also used "gene-expression analysis to understand the influence of various environmental factors across the eight locations," Dr. Fayaz said.

This analysis is a crucial tool for scientists to understand how genes work. It involves studying which genes are active and producing proteins in a given cell or tissue at a specific time. After the rice panicles from all the selected locations were collected, the researchers isolated RNA from each sample using standard lab protocols. (RNA is a molecule that carries genetic information from DNA and which a cell uses to make proteins.)

The researchers converted the RNA to a form more amenable to analysis. Finally, using the real-time polymerase chain reaction (RT-PCR) process, they amplified the presence of different bits of RNA pertaining to the sets of candidate genes responsible for degrading fatty acids and metabolising linoleic acid and ether lipids. In this way, the researchers were able to identify which genes were turned 'on' or 'off' and how much of each gene's RNA was present.

Dr. Fayaz added that the results from the gene-expression analysis matched those from the GC-MS and e-nose analyses – indicating that the environment guides Mushk Budiji's flavour profile through its genes.

ARCHAEOLOGICAL SURVEY OF INDIA WILL 'DELIST' SOME 'LOST' MONUMENTS. WHAT'S HAPPENING, AND WHY?

The Archaeological Survey of India (ASI) has decided to delist 18 "centrally protected monuments" because it has assessed that they do not have national importance. These 18 monuments are part of an earlier list of monuments that the ASI had said were "untraceable".

Among the monuments that face delisting now are a medieval highway milestone recorded as Kos Minar No.13 at Mujessar village in Haryana, Barakhamba Cemetery in Delhi, Gunner Burkill's tomb in Jhansi district, a cemetery at Gaughat in Lucknow, and the Telia Nala Buddhist ruins in Varanasi. The precise location of these monuments, or their current physical state, is not known.

So what exactly does the "delisting" of monuments mean?

The ASI, which works under the Union Ministry of Culture, is responsible for protecting and maintaining certain specific monuments and archaeological sites that have been declared to be of

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national importance under the relevant provisions of The Ancient Monuments Preservation Act, 1904 and The Ancient Monuments and Archaeological Sites and Remains Act, 1958 (AMASR Act).

Delisting of a monument effectively means it will no longer be conserved, protected, and maintained by the ASI. Under the AMASR Act, any kind of construction-related activity is not allowed around a protected site. Once the monument is delisted, activities related to construction and urbanisation in the area can be carried out in a regular manner.

The list of protected monuments can grow longer or shorter with new listings and delistings. ASI currently has 3,693 monuments under its purview, which will fall to 3,675 once the current delisting exercise is completed in the next few weeks. This is the first such large-scale delisting exercise in several decades.

Section 35 of the AMASR Act says that "If the Central Government is of opinion that any ancient and historical monument or archaeological site and remains declared to be of national importance...has ceased to be of national importance, it may, by notification in the Official Gazette, declare that the ancient and historical monument or archaeological site and remains, as the case may be, has ceased to be of national importance for the purposes of [the AMASR] Act.

The gazette notification for the 18 monuments in question was issued on March 8. There is a two-month window for the public to send in "objections or suggestions".

And what does it mean when the ASI says a monument is "untraceable"?

The AMASR Act protects monuments and sites that are more than 100 years old, including temples, cemeteries, inscriptions, tombs, forts, palaces, step-wells, rock-cut caves, and even objects like cannons and mile pillars ("kos minars") that may be of historical significance.

A board on Kos Minars at the Delhi zoo. It says: "The Kos Minars or Mile Pillars are medieval milestones that were made by the 16th-century Afghan Ruler Sher Shah Suri and later on by Mughal emperors, Akbar, Jahangir and Shah Jahan. These Minars were erected by the Mughal Emperors on the main highways across the empire to mark the distance. The Kos Minar is a solid round pillar around 30 feet in height that stands on a masonry platform built with bricks and plastered over with lime. Though not architecturally very impressive, being milestones, they were an important part of communication and travel in a large empire. Kos Minars were used to mark the royal route from Agra to Ajmer via Jaipur in the west, from Agra to Lahore/Peshawar via Delhi in the north, from Agra to Mandu via Shivurn in the south and from Delhi to Bengal via Kannauj in the east. Modern Indian highways have come up along roughly the same routes as those marked by these minars. The geographic span makes for nearly 3000 kilometers of Mughal highways, accounting for nearly 1000 Kos Minars. Kos is an ancient Indian unit of distance which is equivalent to 3 Km." A board on Kos Minars at the Delhi Zoo. (Via Wikimedia Commons)

These sites are scattered across the length and breadth of the country and, over the decades, some, especially the smaller or lesser known ones, have been lost to activities such as urbanisation, encroachments, the construction of dams and reservoirs, or sheer neglect, which has resulted in their falling apart. In some cases, there is no surviving public memory of these monuments, making it difficult to ascertain their physical location.

Under the AMASR Act, the ASI should regularly inspect protected monuments to assess their condition, and to conserve and preserve them. In cases of encroachment, the ASI can file a police



complaint, issue a show-cause notice for the removal of the encroachment, and communicate to the local administration the need for demolition of encroachments.

This, however, has not happened with uniform effectiveness. The ASI, which was founded in 1861 after the need for a permanent body to oversee archaeological excavations and conservation was realised, remained largely dysfunctional in the decades that followed.

The bulk of the currently protected monuments were taken under the ASI's wings from the 1920s to the 1950s, but in the decades after Independence, the government chose to spend its meagre resources more on health, education, and infrastructure, rather than focusing on protecting heritage, officials said. The ASI also concentrated more on uncovering new monuments and sites, instead of conserving and protecting existing ones.

How many historical monuments have been lost in this way?

In December 2022, the Ministry of Culture submitted to the Parliamentary Standing Committee on Transport, Tourism and Culture, that 50 of India's 3,693 centrally protected monuments were missing. Fourteen of these monuments had been lost to rapid urbanisation, 12 were submerged by reservoirs/ dams, and the remaining 24 were untraceable, the Ministry told the Committee.

The Committee was informed that security guards were posted at only 248 of the 3,693 protected monuments. In its report on 'Issues relating to Untraceable Monuments and Protection of Monuments in India', the Committee "noted with dismay that out of the total requirement of 7,000 personnel for the protection of monuments, the government could provide only 2,578 security personnel at 248 locations due to budgetary constraints".

The Parliamentary panel said it was perturbed to find that the Barakhamba Cemetery in the very heart of Delhi was among the untraceable monuments. "If even monuments in the Capital cannot be maintained properly, it does not bode well for monuments in remote places in the country," it said.

Officials had told The Indian Express at the time that the cemetery may have been lost to the "redevelopment of the New Delhi Railway Station". The cemetery is now set for delisting.

Was 2022 the first time that the disappearance of these monuments was noticed?

ASI officials had told The Indian Express then that no comprehensive physical survey of all monuments had ever been conducted after Independence. However, in 2013, a report by the Comptroller and Auditor General (CAG) of India had said that at least 92 centrally protected monuments across the country had gone missing.

The CAG report said that the ASI did not have reliable information on the exact number of monuments under its protection. It recommended that periodic inspection of each protected monument be carried out by a suitably ranked officer. The Culture ministry accepted the proposal.

The Parliamentary panel noted that "out of the 92 monuments declared as missing by the CAG, 42 have been identified due to efforts made by the ASI". Of the remaining 50, 26 were accounted for, as mentioned earlier, while the other 24 remained untraceable.

The Ministry said, "Such monuments which could not be traced on ground for a considerable time because of multiple factors, despite the strenuous efforts of ASI through its field offices, were referred as Untraceable monuments."



Eleven of these monuments are in Uttar Pradesh, two each in Delhi and Haryana, and others in states like Assam, West Bengal, Arunachal Pradesh, and Uttarakhand. An official had told The Indian Express at the time the Parliamentary panel's report came out that, "Many such cases pertain to inscriptions, batteries and tablets, which don't have a fixed address. They could have been moved or damaged and it may be difficult to locate them."

IS HOLI BECOMING WARMER THAN BEFORE? WHAT A NEW STUDY SAYS

Since 1970, both March and April have become warmer across India, increasing the chances of having unconformable and possibly dangerously hot conditions, according to a study published on Friday. As a result, in some states, there is a higher likelihood of temperatures around Holi to cross 40 degree Celsius — a rare occurrence in the early 1970s.

The study was carried out by Climate Central, a US-based independent group of scientists and communicators. Researchers examined daily temperatures from January 1, 1970, to December 31, 2023, for the study.

RISING FROM THE ASHES

Masaan Holi, a two-day event on different ghats of Varanasi, draws devotees from the world to witness the celebration by applying ashes from funeral pyre and gulal (pink powder) upon each other. It is also believed to be a celebration of death, where the devotees in huge numbers take part in procession making their way to the ghat through dancing, singing, chanting 'Har-Har Mahadev' as the ashes of the pyres and gulal thicken the air.

The lanes leading to the ghats are too narrow to navigate even by two-wheelers, and almost no one follows traffic rules anywhere. In this age of social media, the number of people recording the procession or celebration was higher than those who were participating.

Varanasi, also known as the spiritual capital of India, is a city on the left bank of the Ganga in Uttar Pradesh. The holy land, with over 2,000 temples and ghats, witnesses elaborate rituals, including evening aarti prayers that draws thousands of devotees. Many others come for taking sacred bath in the river, believed to cleanse them of sins and bestow divine blessings, while some come to meditate and take in the beauty of the surroundings.

WITH LESS THAN 150 GREAT INDIAN BUSTARDS REMAINING IN THE WILD, WHAT'S DRIVING THEIR EXTINCTION?

The Supreme Court last week said it will review its April 2021 order to bury underground all power lines in the habitat of the Great Indian Bustard (GIB), after the Centre found the order "practically impossible to implement" over long distances.

The court created a seven-member committee that will suggest steps to protect and conserve the GIB, identifying critical areas where power lines may have to go underground.

With fewer than 150 individuals of this large, ostrich-like bird species left in the wild, the critically endangered GIB is caught in a deadly maze of power lines that criss-cross its last refuge in the Kutch and Thar deserts of western India. As these vast, open landscapes also carry the promise of abundant solar and wind energy, the high-tension networks evacuating power are only getting denser with new projects proposed every year.



Following the deaths of a number of birds due to collisions with power lines over the years, the top court three years ago ordered that the overhead transmission network should be sent underground in key habitats of the GIB.

Why power lines kill bustards

Power lines pose a risk to all flying birds. In 2020, a study carried out by the Wildlife Institute of India (WII) in 4,200 sq km of GIB habitat in and around Desert National Park (DNP) in Rajasthan estimated that power lines killed around 84,000 birds of multiple species every year.

GIBs are especially vulnerable because of their narrow frontal vision and large size. Unlike some birds that have a panoramic vision around the head, species like raptors and bustards have extensive blind areas above their heads. When they stretch their head forward to scan the ground below, they fly blind in the direction of travel.

In an affidavit submitted in court in March 2021, the Ministry of Power said: “They cannot detect power lines ahead of them from far. As they are heavy birds, they are unable to manoeuvre across power lines within close distances.”

The 2020 WII study estimated that a “conservative estimate of 4 power line induced mortalities per year was sufficient” to cause the extinction of the GIB within 20 years. Acknowledging the urgency, the SC in April 2021 ordered the lines to be buried “irrespective of the cost factor”.

Arguments of the Centre

In an affidavit submitted to the SC this February, the Centre said taking lines of 66 KV and higher voltage underground was not feasible for the evacuation of bulk power due to constraints such as transmission losses, maintenance challenges, multiple cable joints, increased time requirements, and concerns of safety.

“The cost implications of undergrounding of all power lines in the large area identified are very heavy — running into many thousands of crores,” the Centre said. “The cost of externalities that will burden the nation”, it said, were “huge” and “disproportionate”. The affidavit also said that harnessing renewable power from high-potential areas of Rajasthan and Gujarat was “essential for meeting rising power demand...and...India’s international commitments on climate change”.

On ground, a reality check

On March 5, 2020, Power Minister R K Singh told Lok Sabha that underground cable systems of 220-400 KV voltage were “an integral part of the Modern Day Power Transmission Infrastructure”.

However, the minister explained, due to higher reactive compensation requirements and higher costs compared to overhead systems, underground cables are being used on a case-by-case basis for short distances. His answer annexed a list of 54 underground power lines — the longest being a 320KV line over 32 km. In its 2021 order, the SC listed two types of power lines — those that would install bird diverters, and those that would be converted to underground lines, if feasible, within a year.

In Rajasthan, 25 transmission lines with a total length of 1,342 km were to install bird diverters. Only four of these lines, of 104 km cumulative length, were to be laid underground. All four are 33 KV lines, and the longest stretches 45 km.



A summary cost estimate put the total expenses of installing bird diverters across 1,342 km and undergrounding 104 km at Rs 287.16 crore, which “could be reduced to approx Rs 150 crore by opting for economic but quality diverters”.

While the Centre’s affidavit protested against spending “many thousands of crores”, none of the four 33KV lines — budgeted at only Rs 59 crore for 104 km in Rajasthan — have been laid underground in the three years since the SC’s 2021 order.

Over this period, a court-appointed committee appraised applications for new power lines of around 2,356 km through the GIB landscape in the Thar, and ratified 98% of the length for overhead laying.

Other threats faced by GIB

Power lines are not the only threat to the GIB. Free-ranging dogs have proliferated alarmingly in the Thar landscape. In 2017, feral packs accounted for up to a third of Chinkara depredation in the DNP.

While GIBs continue to be hunted sporadically, the widespread use of pesticides in farmlands poses a greater risk to the bird. Loss of grassland, particularly nesting sites, and an erosion of support from local communities are other concerns.

In its affidavit, the Centre said the government was working to save the bustard through initiatives such as captive breeding and habitat restoration and protection. Despite teething troubles, efforts at captive breeding succeeded at Sam in Jaisalmer district, when two GIB females laid eggs in captivity and a chick was hatched through artificial incubation in March 2023.

However, the purpose of captive breeding is to supplement the wild population, which is possible only when a sizable habitat is freed of hostile infrastructure. “Burying cables is the priority, since bird diverters are not foolproof. Where undergrounding is not feasible, we should buy the best diverters and spend well on their maintenance. The government has enough CAMPA funds [meant for compensatory afforestation and improvement of wildlife habitat],” a former member of the Rajasthan State Wildlife Board said.

Not green energy vs wildlife

A forest officer who has served in DNP cautioned against pitting sustainable development goals against the survival needs of a species. “Godavan (GIB) is the flagship species of the grassland, and the state bird of Rajasthan. We cannot greenwash its potential loss in the name of renewable power,” he said.

A WII researcher who has worked on the species stressed the danger of “an infrastructure overdrive” in the desert. “We need to demarcate how much land we can devote to installations for harnessing the sun and wind without damaging the desert ecology,” he said.

In its order passed on March 21, the SC was inclined to modify the scope of burying power lines from 88,636 sq km of potential GIB area to 13,696 sq km of priority GIB area in Rajasthan and Gujarat. On his part, M K Ranjitsinh, the petitioner in the case, has asked that at least 20,890 sq km of GIB habitat be freed of overhead lines.

The expert committee appointed by the court has until July 31 to make its recommendations.



ARUNACHAL, ASSAM TOLD TO READY ELEPHANT CORRIDOR PLAN

The wildlife division of the Union Ministry of Environment, Forest and Climate Change (MoEFCC) recently directed the forest departments of Arunachal Pradesh and Assam to prepare a proposal to notify the Dulung-Subansiri elephant corridor – downstream of the 2000 MW Lower Subansiri hydroelectric project.

The proposal to demarcate the corridor will be presented during the next meeting of the National Board for Wildlife (NBWL), which is the apex government body on wildlife conservation and regulation of development projects in wildlife areas. Notification of the elephant corridor will involve physically marking the relevant areas used by elephants on the ground as well as potentially notifying parts of the corridor as either a wildlife sanctuary or a conservation reserve.

The proposal to demarcate the Dulung-Subansiri elephant corridor downstream of the 2000 MW Lower Subansiri hydroelectric project will be presented during the next meeting of the National Board for Wildlife. An elephant corridor is a strip of land that enables connectivity in otherwise fragmented wildlife habitats. They help animal movement and enable genetic exchange which in turn helps in sustaining elephant population.

The 2000 MW Lower Subansiri hydro-project, executed by the National Hydroelectric Power Corporation (NHPC), has been in the works since 2003 and is yet to be commissioned. It is located in the Kamle and Dhemaji districts of Arunachal Pradesh and Assam, respectively, and is being constructed on the Subansiri River, a tributary of the Brahmaputra River. As per the WII's study, even before the project's commissioning, the establishment of a residential complex, offices, school, and other recreational spaces by the NHPC has already caused both habitat loss and hindrance to elephant movement. "Numerous commercial establishments and roads have proliferated, adding to the biotic pressure on the already tenuous elephant habitat," the WII's report stated.

The WII report had also pointed out that hydropeaking for power generation from the project will pose a threat of sweeping away elephants, especially calves, due to flash floods. "Peaking operations resulting in a sudden increase in water depth by nearly 2.0 meters and accompanied by velocity could increase the risk of elephants, particularly calves, getting swept by flash floods," the report said.

Hydropeaking refers to regulating the flow of water released from a dam to generate power, depending on demands. Even as the threats posed by hydropeaking were discussed during the NBWL's January meeting, it has not yet commissioned any hydrological studies, as suggested by the WII, to understand the wider impacts of hydropeaking downstream of the power project.

WHAT ARE THE NEW RULES FOR ELEPHANT TRANSFERS?

The story so far:

The Centre has notified a set of rules called the Captive Elephant (Transfer or Transport) Rules, 2024 that liberalises the conditions under which elephants may be transferred within or between States.



What are the rules around the transfer and transport of elephants?

Elephants are, according to the provisions of the Wildlife Protection Act, a Schedule 1 species and therefore, be it wild or captive, cannot be captured or traded under any circumstances. Section 12 of the Act allows Schedule I animals to be translocated for 'special purposes' such as education and scientific research. They can also be translocated for population management of wildlife without harming any wild animal and collection of specimens for recognised zoos/museums. Captive elephants because of their historical role in forest management, timber transport, presence in estates of erstwhile royal families and in temple precincts for religious purpose can be owned and therefore come under a special category. However, strict rules guide the transfer of such elephants. Section 40 (2) of the Wildlife Protection Act, 1972 prohibits the acquisition, possession and transfer of a captive elephant without the written permission of the Chief Wildlife Warden of the State. Until 2021, however, these laws explicitly said that such transactions ought not to be of a 'commercial nature'. The Environment Ministry in 2021 brought in an amendment that allowed the transfer of elephants for 'religious or any other purposes'. Such a broad interpretation, activists and researchers said, could accelerate trafficking and illegal commercial transactions. A standing committee, led by former Environment Minister, Jairam Ramesh, opposed this section but it was passed into law.

What do the updated rules say?

These rules provide new relaxations under which captive elephants can change owners or be transferred. These include, for instance, situations when an owner is no longer in a position to maintain the elephant or when a state's Chief Wildlife Warden "deems it fit and proper" to transfer the elephant in circumstances which call for better upkeep of the elephant. Before a transfer within the State, an elephant's health has to be ratified by a veterinarian, and the Deputy Conservator of Forests has to establish that the animal's current habitat and prospective habitats are suitable. The Chief Wildlife Warden on receipt of such documents may choose to reject or approve the transfer.

If the transfer involves moving the elephant outside of a State, similar conditions apply. Before a transfer is effected, the "genetic profile" of the elephant has to be registered with the Ministry of Environment, Forest and Climate Change. Earlier rules required that an elephant being transferred from say, Assam to Gujarat would need permissions from the Chief Wildlife Wardens of every State that the elephant would pass through in the process of being ferried by road. Now only the originating and recipient States' permissions are required.

What do the updates mean?

The Wildlife Protection Act is essentially a prohibitive law. It puts in a variety of restrictions to curb the trafficking of wild animals. However independent researchers say that with regard to elephants the law has become lax. The establishment of India's largest private zoo in Jamnagar, Gujarat which is affiliated to the Reliance Foundation, has brought some of these questions to the fore. The facility, which is a rescue centre and ostensibly exists to rehabilitate traumatised and injured elephants, among other wildlife, hosts a reported 200 elephants and controversially also hosts "healthy animals," according to a recent journalistic investigation published in the periodical Himal Southasia. There are also concerns that some of these elephants aren't captive but sourced from the wild.



BUSINESS & ECONOMICS

DANIEL KAHNEMAN — A PSYCHOLOGIST AMONG ECONOMISTS

Consider the following riddle: “A bat and a ball together cost \$1.10. The bat costs a dollar more than the ball. How much does the ball cost?” Think for a moment but go easy on yourself if your answer was 10 cents. Of course, it is wrong. If the ball was 10 cents the total cost of bat and ball would be \$1.20. The correct answer is 5 cents. But the point of the riddle is to underscore that most people had a number in their mind and that number was 10 cents. According to psychologist Daniel Kahneman, who died on March 27 at the age of 90, this example showed how people often make decisions in a hurry, without checking, and are also quite confident about it.

Kahneman was an Israeli-American psychologist who revolutionised the world with his experiments and insights — so much so that even though he was not an economist, he went on to win the Nobel prize in economics in 2002 “for having integrated insights from psychological research into economic science, especially concerning human judgment and decision-making under uncertainty”. Kahneman wrote several seminal books and papers. The most-widely read was titled “Thinking, fast and slow”. The book explained how people think, the errors they make and why, the biases they have and the fallacies that often cloud their decisions. His latest book, “Noise”, focused on the unwanted variability, as opposed to bias, in judgments that should be identical.

Kahneman’s lasting contribution to economics has been to question the dominance of the assumption that all economic agents are “rational”. Through his experiments he underscored the flaws in such assumptions. In doing so, he helped establish behavioural economics as a field and many such as Richard Thaler (winner of the 2017 Nobel prize in economics and most commonly associated with his book “Nudge”) have further advanced the use of such psychological insights in economics. At a macro level, however, even Kahneman knew that society rewards overconfidence. “We want our leaders to be overconfident. If they told us the truth about the uncertainty, we would discard them in favour of other leaders who give an impression that they know what they are doing”.

BALTIMORE BRIDGE COLLAPSE COULD IMPACT GLOBAL AUTO, COAL SUPPLY CHAINS

The blockade of vessel traffic at the crucial Port of Baltimore in the US after the collapse of the Francis Scott Key bridge on Tuesday could have a ripple effect chiefly on the global automotive vehicle and coal supply chain as operations at the port are expected to remain shut for months. However, experts have ruled out any direct impact on India’s trade.

This comes close on the heels of major shipping disruption such as the Red Sea crisis and the drought in the Panama Canal that has already hit over one-third of the global goods trade at a time when WTO has predicted weak upward momentum in trade in 2024.

Disruption in the global supply chain for automobile vehicles comes as the Port of Baltimore is the busiest port in the US handling nearly 8.5 lakh autos, light trucks and farm and construction machinery. India’s export of vehicle and auto components exports to the US in FY23 stood at \$2.1 billion, a fraction of India’s total exports to the US that stands at \$78 billion.

“Automobile exports used to be higher with the US before Ford and General Motor’s exit from India. Currently, the trade is not that significant. We have not received any report of a disruption



at the moment in terms of automobile exports to the US. At the moment there is no challenge,” an Indian auto industry executive who did not wish to be named said.

The Port of Baltimore is also crucial for its handling of coal exports from the US making up about 1.5 per cent of the global coal trade. India, however, imports the majority of its coal from Australia and Indonesia. The US only comprises 7 per cent of India’s total coal imports, as per commerce and industry ministry data.

“The incident primarily impacts auto markets due to Baltimore’s role as a key import hub for vehicles, particularly affecting Asia-Pacific’s largest car exporters like China and Japan. The coal market is also affected, with over a quarter of US seaborne coal exports, which make up about 1.5% of the global coal trade, facing potential disruptions,” a Moody’s Analytics report said. “The event, though unlikely to significantly affect Asia-Pacific macroeconomic data, serves as a reminder of the fragility of global supply chains amidst ongoing geopolitical conflicts, natural disasters, and industrial actions that threaten to exacerbate supply chain vulnerabilities and inflationary pressures,” Harry Murphy Cruise, Economist, Moody’s Analytics said.

Supply chain vulnerability largely stems from the ongoing disruption in the Red Sea region that has forced global shipping lines to take longer and costlier trade routes. The United Nations Conference on Trade and Development (UNCTAD) estimates that transits passing the Suez Canal decreased by 42% compared to its peak. “With major players in the shipping industry temporarily suspending Suez transits, weekly container ship transits have fallen by 67%, and container carrying capacity, tanker transits, and gas carriers have experienced significant declines,” UNCTAD report released last month said.

The Panama Canal, a critical artery linking the Atlantic and Pacific oceans, is confronting a separate challenge. Dwindling water levels have raised concerns about the long-term resilience of global supply chains, underscoring the fragility of the world’s trade infrastructure, the report said.

The collapse of the Francis Scott Key bridge which is still being investigated was caused by a 985-foot-long cargo vessel, called The Dali. The cargo ship was leaving the Port of Baltimore when it lost power and issued a mayday call just before hitting a pillar of the bridge.

WTO’S EXISTENTIAL CRISIS

Amidst media hype, the 13th biennial ministerial meeting of the World Trade Organisation (WTO) ended without significant accomplishment. The WTO member countries could not agree on how to solve several issues staring at the international community. First is whether countries have the right to purchase, stockpile, and distribute food to their citizens in need. Also known as the public stockholding (PSH) programme, while this is the sovereign right of countries, the WTO rules throw a spanner in the works.

One of the central objectives of the WTO is to cut trade-distorting domestic subsidies. There are limits to the subsidies a country can provide, such as minimum support price (MSP). The WTO rules provide that this price support will be assessed using an average price of the base years 1986-88, which is more than three-and-a-half-decades old. It thus becomes challenging for countries like India to pursue PSH programmes using the instrumentality of MSP. This issue is significant as the farmers of Punjab have hit the streets again demanding a legal guarantee to MSP.

While countries agreed upon a peace clause in 2013, which provides some legal immunity to India’s MSP policy, it is insufficient. Conscious of this, India has been negotiating hard for a



permanent solution. But the recent ministerial meet came a cropper on this. It seems the US and other agricultural exporting nations, also known as the Cairns group, have, again, succeeded in blocking any meaningful movement on this issue. India must continue striving for the PSH solution. But it will also have to think of new ways to support farmers, such as augmenting existing income support schemes like the Pradhan Mantri Kisan Samman Nidhi that are WTO-compatible.

The next important issue on which the ministerial failed is regulating subsidies given by the industrialised world to their industrial shipping fleets indulging in overcapacity and over-fishing (OCOF). OCOF has led to a substantial depletion of fishing stock posing a grave threat to the marine environment. India has been demanding binding rules to rein in these subsidies, with a transition period for developing countries to implement these rules. But, once again, the richer countries prevailed by ensuring that no rules were adopted.

Another major letdown has been the failure to make any significant headway toward solving the crisis affecting the dispute settlement mechanism (DSM). Hailed as a feather in the WTO's cap, the DSM has been paralysed since 2019 due to the US blocking the appointment of the members to the Appellate Body (AB) — the second tier of the two-tier DSM. While WTO member countries have reiterated their commitment to having a well-functioning DSM by the end of 2024, the writing on the wall is clear. The US will not allow the restoration of the AB as it existed till 2019. The most significant proof of this is how the developed countries led informal and non-transparent negotiations on dispute settlement last year. Perplexingly, the talks focussed, not on the dysfunctionality of the AB, but on other issues that perhaps don't need critical attention.

India, one of those demanding the restoration of the body, must understand the US game plan — the de-judicialisation of trade multilateralism. The WTO was created when the neoliberal consensus emerged after the Cold War and the collapse of communism. This period saw not just the legalisation of international relations (countries subjecting themselves to international law) but also its judicialisation (the expansion of international courts and tribunals that dominate decision-making in place of national actors). De-judicialisation, as Daniel Abebe and Tom Ginsburg define it, is the reverse phenomenon where countries weaken international courts to take back decision-making power. This is what the US seems to be doing with the WTO's dispute settlement. It has wrested control from the AB to unilaterally respond to the geo-economic challenges that a rising China presents.

IS INDIA'S GROWTH RATE OVERESTIMATED?

Official data shows that the Indian economy has been growing at 7-8 per cent in recent times. While economic activity seems to have recovered strongly after the pandemic, the actual improvement is uncertain because there are measurement issues. One important issue lies with the GDP deflator. Several experts wrote about this problem after the release of the 2011-12 base year series of national accounts. It's time to revisit this issue.

According to the latest figures, nominal GDP increased by 10.1 per cent in the third quarter of 2023-24 (October-December). This translated into a real growth of 8.4 per cent, implying that the deflator was 1.7 per cent. Could India's inflation be so low? We know this is not plausible. So what is going on?

It may help to start with a disclaimer. The statistical problems are quite technical, and get very complex, very quickly. Any brief explanation will therefore need to generalise and sweep away



this complexity, so that the outlines of the problem can be perceived clearly. With that caveat, let's proceed.

In the old GDP measurement methodology, estimates of real GDP relied heavily on volume-based indices such as the index of industrial production. Real growth (for the most part) was calculated directly, and a deflator was then applied to produce a nominal growth figure. Hence, problems in the deflator did not really matter for real growth rate.

Under a new methodology adopted in 2015, GDP is measured in nominal terms, which is then deflated by price indices to derive the real numbers. The deflator has therefore become crucial. If the deflator underestimates actual inflation, then real growth will be overstated. This is what has been happening for the last year.

There are two separate problems with India's GDP deflator.

First, the National Statistics Office (NSO) does not use the international standard measure of output prices — the producer price index — to deflate GDP. This is because India does not have a PPI. The NSO proxies the PPI with the wholesale price index (WPI). However, the WPI does not track producer prices very well. It is, in fact, heavily skewed towards commodities such as oil and steel which are essential inputs in commodity importing countries like India. Also, the WPI does not measure the price of services, and services constitute two-thirds of the economy.

This skew in the composition of WPI means that whenever commodity prices fall steeply, the WPI will decline, even if producer prices are still rising. This has been a major issue recently. Since September 2022, consumer price index (CPI) inflation has been above 5 per cent, as producers kept increasing prices, but WPI inflation has steadily declined, because global commodity prices have fallen. During April-December, 2023, WPI inflation averaged -1.0 per cent. This persistent fall in WPI inflation artificially inflated real GDP during 2023-24.

Second, most G20 countries calculate real gross value added (GVA) in the manufacturing sector using a methodology known as double deflation. In this method, nominal outputs are deflated using an output deflator, while inputs are deflated using a separate input deflator. Then the real inputs are subtracted from real outputs to derive real GVA. India, by contrast, deflates nominal numbers using a single deflator.

Why does this matter? It matters because if input prices diverge from output prices, single deflation can misstate growth by a big margin.

Consider what has been happening recently. When the price of inputs falls and price of output increases, profits increase and nominal value added goes up (it helps to think of GVA as profits, which go up when input prices fall). Since real GDP is supposed to be measured at "constant prices", this increase needs to be deflated away. Double deflation will do this easily. But single deflation using an input price index like WPI will amplify the nominal increase. So, if the nominal increase in GVA is 10 per cent as the result of rising profits, while WPI falls by 1 per cent, the real increase will be calculated as 11 per cent, even if real output has not changed at all.

Can anything be done to quickly resolve this problem?

There is an interim solution that can be easily applied. The NSO can start using the CPI series to deflate nominal value added. The CPI is closer to producer prices than the WPI.



It is interesting to consider what would happen if CPI is used as a deflator for manufacturing GDP computation for 2023-24. Official numbers show that for the first three quarters, nominal growth rates in this sector were 2.2, 12.0, and 10.6 per cent respectively, while real growth rates were 5.0, 14.4 and 11.6 per cent. CPI inflation (excluding food, fuel and house rent) for these three quarters were 5.9, 5.1 and 4.4 per cent. If the correct deflator had been in line with this CPI inflation, then real manufacturing growth rates would instead have been -3.7, 6.9 and 6.2 per cent for the three quarters.

The change to CPI makes even more sense in the services sector. CPI has extensive information on price movements in various services sub-sectors. It would make a big difference to the estimated 2023-24 growth figures in trade/transport/communication and financial services, bringing down their growth rates by around 6 and 4 percentage points respectively.

In summary, whenever there is a collapse of global commodity prices that pushes the WPI-based deflator far below the CPI, the real GDP growth rate of India is likely to be overestimated. Similarly, as the gap between input and output inflation starts to close, the problem will diminish. But that could also send a misleading signal, because it might seem that growth is slowing, when only the measurement bias is disappearing.

The CPI-WPI differential gives a rough indication of the degree to which the real GDP numbers might be distorted. Given how important the GDP data is, it is imperative that the NSO develops producer price indices and applies the double deflation methodology to avoid these distortions.

A BALANCING ACT

The Centre's fiscal deficit, or the gap between the Union Government's receipts and expenditure, has widened sharply from about ₹11 lakh crore by January to ₹15 lakh crore at the end of February. This represents the deficit moving up from 63.6% of the revised target of ₹17.3 lakh crore to 86.5% within 29 days. This is a significantly bumpier trajectory compared with last year — the deficit target was ₹17.55 lakh crore in 2022-23, it stood at 67.6% of target by January and reached 82.6% in February when the deficit rose ₹2.3 lakh crore. Eventually, last year's fiscal gap was ₹17.33 lakh crore, virtually the same as this year's goal. A couple of factors partially explain the February deficit spurt. One, the Centre transferred around ₹2.15 lakh crore to States through two instalments of their tax devolution share, as opposed to just ₹1.4 lakh crore last year. Second, capital expenditure which had slumped to ₹47,600 crore this January, was scaled up to ₹84,400 crore, over four times February 2023's capex outlay. Capex will have to further rise to ₹1.4 lakh crore in March to meet the government's ₹10 lakh crore target, but the implementation of the Model Code of Conduct for the Lok Sabha polls mid-way through the month could temper the number a bit.

As a proportion of GDP, the deficit last year stood at 6.4% and this year's original target was 5.9% that Finance Minister Nirmala Sitharaman revised to 5.8% in the interim Budget last month. The government has committed to narrow it to 4.5% of GDP by 2025-26, with a 5.1% target for 2024-25. This glide path may need some recalibration in the full Budget for the year after the general election, depending on the next government's priorities and the state of the economy over the current and next quarter. Having sought to prop up growth through public capex since the COVID-19 pandemic, the Centre is hoping private investment shifts to the driving seat, but high inflation, a bad monsoon and uneven consumption demand cloud those hopes. On the revenue spending front, the government still had ₹6 lakh crore of spending room available for March. Just three critical people-centric ministries — Agriculture, Rural Development and Consumer Affairs — still



had over ₹1.03 lakh crore of firepower left for the last month of this fiscal despite their planned spends being revised in February. It is quite plausible that some Ministries will miss their targets and yield a positive surprise on the full-year deficit number. Tightening the belt is good for macroeconomic health, but persistently missing spending goals compromises intended outcomes and signals that there is scope to plan outlays better and borrow less in coming years.

WHY HAS SEBI ASKED FUND HOUSES TO STOP OVERSEAS ETF INFLOWS?

Markets regulator Securities and Exchange Board of India (SEBI) has directed mutual fund houses to stop accepting any more inflows in schemes that invest in overseas exchange-traded funds (ETFs), starting April 1, 2024. SEBI has issued these directions as inflows in these overseas ETFs have come close to the mandated investment limit of \$1 billion in foreign ETFs.

Why is SEBI's direction to MFs ?

The capital market regulator has asked asset management companies (AMCs) not to accept funds in mutual fund plans that invest in overseas exchange-traded funds (ETFs) as the upper limit of \$1 billion for these investments is close to being breached.

"The mutual fund industry has already reached 95 per cent or (\$ 950 million) of the \$1 billion limit. This is the reason why SEBI has asked mutual funds to temporarily stop accepting money in overseas ETFs," said a senior executive at a mutual fund house.

What is the overall limit for mutual funds to invest in overseas ETFs?

Currently, there is an overall cap of \$7 billion set by the Reserve Bank of India (RBI) for fund houses to invest in overseas stocks or mutual funds. MFs are also permitted to invest up to \$1 billion in overseas exchange traded funds. Mutual fund industry has been demanding the RBI to hike the overseas investment limit of \$7 billion.

In January this year, when RBI Governor Shaktikanta Das was asked about plans to revisit the limit on the overseas investment by mutual funds, he said the call on it will be taken when RBI is confident that the rupee has stabilized on a durable basis. "This request has been coming to us from the mutual fund industry from time to time. We will take the call at the right time. It (rupee) has to be stable on a durable basis," Das said, when asked if RBI was looking to revise the limit.

What is an exchange traded fund?

An ETF, or exchange traded fund, is a marketable security that tracks an index, a commodity, bonds, or a basket of assets like an index fund. Unlike regular mutual funds, an ETF trades like a common stock on a stock exchange. The traded price of an ETF changes throughout the day like any other stock, as it is bought and sold on the stock exchange. The trading value of an ETF is based on the net asset value of the underlying stocks that an ETF represents.

ETFs typically have higher daily liquidity and lower fees than mutual fund schemes, making them an attractive alternative for individual investors. ETFs are considered to be more tax efficient compared to other mutual fund schemes. There are mainly five types of ETFs – equity ETF, bonds ETF, commodity ETF, international ETF and sectoral/thematic ETF.



HOW WILL T+0 SETTLEMENT CYCLE BENEFIT INVESTORS, WHICH SECURITIES ARE ELIGIBLE?

The BSE and NSE introduced trading in the T+0 rolling settlement cycle in the equity segment on an optional basis today. The beta version of the optional T+0 settlement cycle, or same-day settlement, was launched for a set of 25 scrips, and with a limited set of brokers.

Last week, the Securities and Exchange Board of India (SEBI) issued operational guidelines for the launch of the shorter tenure settlement cycle.

What is the T+0 trading settlement cycle?

In December last year, the capital markets regulator SEBI proposed to introduce a facility for clearing and settlement of funds and securities on T+0 (same day) on an optional basis, in addition to the existing T+1 settlement cycle. The regulator has also proposed to introduce optional instant settlement at a later stage.

Under the T+0 trade cycle, the settlement of trades will happen on the same day after the closure of the T+0 market. If investors sell a share, they will get the money credited to their account the same day, and the buyer will also get the shares in their demat account on the very day of the transaction.

What are the benefits of T+0 trade settlement?

A shortened settlement cycle will bring cost and time efficiency, transparency in charges to investors, and strengthen risk management at clearing corporations and the overall securities market ecosystem.

The T+0 trade cycle is expected to provide flexibility in terms of faster pay-out of the funds against the securities to the sellers and faster pay-out of securities against the funds to the buyers. It will allow better control over funds and securities by the investors.

For the securities market ecosystem, a shorter settlement cycle will further free up capital in the securities market, thereby enhancing the overall market efficiency. It will enhance the overall risk management of Clearing Corporations (CCs) as the trades are backed by upfront funds and securities.

Which securities are available for trading in the T+0 settlement cycle?

The stock exchanges said Ambuja Cements Ltd, Ashok Leyland Ltd, Bajaj Auto Ltd, Bank of Baroda, Bharat Petroleum Corporation Ltd, Birlasoft Ltd, Cipla Ltd, Coforge Ltd, Divi'S Laboratories, Hindalco Industries, The Indian Hotels Company Ltd, JSW Steel Ltd and LIC Housing Finance are among the set of 25 scrips which are allowed for trading on T+0 settlement cycle.

The other securities include LTIMindtree Ltd, Samvardhana Motherson International Ltd, MRF Ltd, Nestle India, NMDC Ltd, Oil & Natural Gas Corporation Ltd, Petronet LNG Ltd, State Bank of India, Tata Communications Ltd, Trent Ltd, Union Bank of India and Vedanta Ltd.

**Who can participate in the T+0 settlement cycle?**

All investors are eligible to participate in the segment for the T+0 trade settlement cycle if they are able to meet the timelines, process and risk requirements as prescribed by the Market Infrastructure Institutions (MIIs).

What are the trade timings? What will be the price band in the T+0 trade cycle?

For the optional T+0 settlement cycle, there will be one continuous trading session from 09:15 AM to 1:30 PM. The settlement of funds and securities will be completed on the same day by 4:30 PM.

The price band in the T+0 segment will operate with a price band of +100 basis points from the price in the regular T+1 market. This band will be recalibrated after every 50 basis points movement in the underlying T+1 market.

MNREGA WAGE RISE

The CENTRE on Wednesday notified new wage rates for unskilled manual workers under the Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA), 2005 for the financial year 2024-2025, with Goa seeing the maximum hike of 10.56% over the current wage rate, and Uttar Pradesh and Uttarakhand recording the lowest raise of 3.04% each.

The new wage rates, notified by the Ministry of Rural Development under sub-section (1) of section 6 of MGNREGA 2005, will become effective from April 1, 2024. As per the notification, the highest rate of NREGS wage (Rs 374 per day) has been fixed for Haryana, while the lowest (Rs 234 per day) has been fixed for Arunachal Pradesh and Nagaland. As far as the state-wise increase over the current year (FY 2023-2024) is concerned, Goa has seen the maximum hike of 10.56% (Rs 34), taking the wage to Rs 356 per day for FY 2024-2025 against Rs 322 per day in the current fiscal.

In fact, three other states — Karnataka, Andhra Pradesh, and Telangana — have also seen over 10% hike in the NREGS wages.

In Karnataka, the new NREGS wage rate will be Rs 349 per day, 10.44% higher than the existing rate of Rs 316 per day. For Andhra Pradesh and Telangana, the NREGS wage rates have been fixed at Rs 300 per day for 2024-2025, which is 10.29% higher as compared to Rs 272 per day during the current financial year.

Madhya Pradesh and Chhattisgarh, which share the same wage rate under the NREGS, have seen almost 10% hike — Rs 243 per day from the existing Rs 221. Uttar Pradesh and Uttarakhand, which share the same NREGA wage rate, have recorded the lowest hike at just 3.04% from existing Rs 230 to Rs 237 per day. Eight other states have seen a hike below 5% — Haryana, Assam, Manipur, Arunachal Pradesh, Nagaland, Rajasthan, Kerala and Lakshadweep. Overall, the wages have seen an average increase of about 7% — from the existing all-India average wage rate of Rs 267.32 per day to Rs 285.47 per day for the financial year 2024-25.

The Central government fixes state-wise wage rates for NREGS workers under sub-section (1) of section 6 of the MGNREG Act, 2005. The NREGS wage rates are fixed according to changes in the CPI-AL (Consumer Price Index- Agriculture Labor), which reflects the increase in the inflation in the rural areas.



JOBS OUTLOOK BLEAK

A recent report that focused on the current status and outlook for youth employment in India paints a grim picture of the country's widely touted 'demographic dividend', which appears set to waste away unless there are immediate and targeted policy interventions. 'The India Employment Report 2024', by the Institute for Human Development/International Labour Organisation, posits a bleak outlook for the approximately 7-8 million young people being added to the labour force each year, with youth accounting for almost 83% of India's unemployed workforce. Even more distressing is that among the unemployed, the proportion of educated young people, those who have had a secondary level education or higher, had almost doubled to 65.7% as of 2022, from 35.2% in 2000. Also, graduates among the youth experienced a nine times greater unemployment rate (29.1%) than young persons who could not read or write (3.4%). These depressing statistics underline both an absence of jobs capable of absorbing educated young people aspiring for better paying jobs and the shortcomings in the quality of education that are leaving large numbers of educated youth still incapable of qualifying to meet job criteria. Further, wages, after accounting for inflation, have either stagnated or witnessed a decline.

The window for India to leverage its sizeable cohort of youth for wider socio-economic gains is fast closing, with the share of young people forecast to decline to 23% by 2036, from 27% in 2021. As the report's authors note: "Unemployment and the rate of youths not in employment, education or training are high, and working conditions among a majority of employed youths are poor, although the economy has been growing at a high rate. This severely constrains the realisation of this potential [the harnessing of the demographic dividend]." Other trends, be it the significant gender imbalance in the Labour Force Participation Rate (LFPR), with the women's LFPR of 32.8% in 2022 about 2.3 times lower than the 77.2% for men, or that 90% of workers still have informal jobs, essentially emphasise the lack of a concerted overarching policy vision to ensure better jobs for all. The Chief Economic Adviser's hand wringing over the government's limitations to engender change has to only be juxtaposed against the U.S. Federal Open Market Committee's primary policy mandate 'of promoting maximum employment along with stable prices' to realise intent ultimately holds the key. With the general election process underway, politicians have their task cut out to ensure jobs and the quality of education and training for a technologically evolving economy are accorded primacy not just in their campaigns but in policy formulation thereafter.

STATE OF EMPLOYMENT IN INDIA: WHAT A NEW REPORT SAYS ABOUT YOUTHS AND WOMEN, CONCERNS AND CAUTION

There have been "paradoxical improvements" in labour market indicators such as the labour force participation rate, workforce participation rate, and unemployment rate in India in recent years after long-term deterioration from 2000-2019. The improvement has coincided with periods of economic distress, both before and during the Covid-19 pandemic, says the India Employment Report 2024 released by the Institute for Human Development and International Labour Organisation on Tuesday (March 26).

The big picture

The report has flagged concerns about poor employment conditions: the slow transition to non-farm employment has reversed; women largely account for the increase in self-employment and unpaid family work; youth employment is of poorer quality than employment for adults; wages and earnings are stagnant or declining.



Status of unemployment of youths and adults in India. Status of unemployment of youths and adults in India.

The 'employment condition index' has improved between 2004-05 and 2021-22. But some states — Bihar, Odisha, Jharkhand, and UP — have remained at the bottom throughout this period, while some others — Delhi, Himachal Pradesh, Telangana, Uttarakhand, and Gujarat — have stayed at the top.

The index is based on seven labour market outcome indicators: (i) percentage of workers employed in regular formal work; (ii) percentage of casual labourers; (iii) percentage of self-employed workers below the poverty line; (iv) work participation rate; (v) average monthly earnings of casual labourers; (vi) unemployment rate of secondary and above-educated youth; (vii) youth not in employment and education or training.

Employment quality

Informal employment has risen — around half the jobs in the formal sector are of an informal nature. Self-employment and unpaid family work has also increased, especially for women. Almost 82% of the workforce is engaged in the informal sector, and nearly 90% is informally employed, the report said.

Self-employment remains the primary source of employment — 55.8% in 2022. Casual and regular employment accounted for 22.7% and 21.5% respectively.

The share of self-employment remained almost stable around 52% between 2000 and 2019, while regular employment increased by almost 10 percentage points, to 23.8% from 14.2%. This reversed by 2022, with self-employment increasing to 55.8%, while the share of regular employment declined to 21.5%. Casual employment consistently declined to 22.7% in 2022 from 33.3% in 2000.

Regular employment is generally seen as providing better-quality jobs due to the regularity of employment and associated social security benefits, while casual work is linked with relatively poor-quality jobs due to its irregular nature and lower daily earnings.

Share of unemployed educated youths in total unemployed persons and youth unemployment rate by social group and level of education. Share of unemployed educated youths in total unemployed persons and youth unemployment rate by social group and level of education.

Participation of women

The female labour force participation rate (LFPR) in India remains among the world's lowest. Female LFPR declined by 14.4 percentage points (compared to 8.1 percentage points for males) between 2000 and 2019. The trend reversed thereafter, with female LFPR rising by 8.3 percentage points (compared to 1.7 percentage points for male LFPR) between 2019 and 2022.

There is a considerable gender gap — women's LFPR (32.8%) in 2022 was 2.3 times lower than men's (77.2%). India's low LFPR is largely attributed to the low female LFPR, which was much lower than the world average of 47.3% in 2022, but higher than the South Asian average of 24.8%, as per ILO data.



Structural transformation

There has been a reversal of the slow transition towards non-farm employment after 2018-19. The share of agriculture in total employment fell to around 42% in 2019 from 60% in 2000.

This shift was largely absorbed by construction and services, the share of which in total employment increased to 32% in 2019 from 23% in 2000. The share of manufacturing in employment has remained almost stagnant at 12-14%.

Since 2018-19, this slow transition has stagnated or reversed with the rise in the share of agricultural employment.

Youth employment

There has been a rise in youth employment, but the quality of work remains a concern, especially for qualified young workers.

Youth employment and underemployment increased between 2000 and 2019 but declined during the pandemic years. However, unemployment among youths, especially those with secondary-level or higher education, has intensified over time.

In 2022, the share of unemployed youths in the total unemployed population was 82.9%. The share of educated youths among all unemployed people also increased to 65.7% in 2022 from 54.2% in 2000.

The unemployment rate among youths was six times greater for those who had completed secondary education or higher (18.4%) and nine times higher for graduates (29.1%) than for persons who could not read or write (3.4%) in 2022. This was higher among educated young women (21.4%) than men (17.5%), especially among female graduates (34.5%), compared to men (26.4%).

The unemployment rate among educated youths grew to 30.8% in 2019 from 23.9% in 2000, but fell to 18.4% in 2022.

The way forward

There are five key policy areas for further action: promoting job creation; improving employment quality; addressing labour market inequalities; strengthening skills and active labour market policies; and bridging the knowledge deficits on labour market patterns and youth employment.

The rise of artificial intelligence (AI) could have an impact on employment, the report said, noting that the outsourcing industry in India could be disrupted because some back-office tasks would be taken over by AI.

Investment and regulations are required in the emerging care and digital economies, which could be an important source of productive employment. The lack of job security, irregular wages, and uncertain employment status for workers pose significant challenges for gig or platform work.

Economic policies are required to boost productive non-farm employment, especially in the manufacturing sector, with India likely to add 7-8 million youths annually to the labour force during the next decade.



More support needs to be provided to micro, small and medium-sized enterprises, especially by providing tools such as digitalisation and AI and a cluster-based approach to manufacturing.

WHY IS DGCA FIRM ON NEW REST RULES FOR PILOTS?

The story so far:

The Directorate General of Civil Aviation (DGCA) has rejected a request by airlines to postpone new pilot duty norms, reiterating that the revised schedule will have to be implemented from June 1. The DGCA had notified the revised rules governing duty hours and rest periods for pilots in January.

What are the new rules?

The new rules provide enhanced weekly rest for pilots which has gone up from 36 hours to 48 hours. The rules have also reduced night-time flying, which is known to contribute to fatigue and impact alertness levels as sleep is displaced from the optimum part of the circadian rhythm.

Earlier, a pilot could carry out six landings during night-time flying, which has now been reduced to two. The night-time shift has been extended by an hour to 6 a.m, from the earlier midnight to 5 a.m. The maximum flight duty period for flights encroaching night-time has also been reduced from 10 hours to eight hours. While pilots have broadly welcomed the changes, their demand for a ban on two consecutive night duties went unheeded. Pilots say that flying a second night without a reset of the circadian rhythm is extremely stressful. Consecutive night duties result in accumulation of sleep debt and an increase in fatigue related impairment. According to IATA's Fatigue Management Guide for airlines, recovery of waking alertness and performance after accumulating a sleep debt may take longer than two nights of unrestricted sleep.

Pilots also pointed out that airlines are only required to publish the crew roster "sufficiently in advance" and the time frame has not been defined unambiguously. The draft rules placed for stakeholder comments had proposed that rosters be finalised seven days in advance.

The DGCA also wants airlines to submit an analysis of fatigue reports submitted by pilots on a quarterly basis along with an action taken report. It has also said that it plans to adopt a new regime of fatigue management, known as the Fatigue Risk Management System, which is a data-driven approach to enhance monitoring and reporting of flight crew fatigue though pilots are apprehensive that this could reduce existing rest periods prescribed in the rules.

Why are the airlines opposed to it?

The Federation of Indian Airlines, FIA, comprising Air India, IndiGo and SpiceJet, wrote to the DGCA in February seeking postponement of the June 1 implementation deadline as it could have "immediate and significant impact to business and customers alike" as airlines would be required to hire "15% to 25% more pilots" when it takes approximately 8-10 months to release a newly inducted pilot for flying. The FIA warned that the June 1 deadline could result in the cancellation of 15%-20% of flights by most airlines as well as cancellation of some long-haul international flights. In response, the DGCA reiterated that it will stick to the June 1 deadline.

A senior DGCA official told The Hindu that by speaking about flight cancellations during the peak summer travel season, airlines were indulging in "scaremongering". He said that a six-month time frame for implementation was provided keeping in mind that a commercial pilot licence holder,



who has completed his training on a specific type of aircraft such as an A320 or Boeing 737 MAX, did not need more than four months to be cleared for flying.

Is fatigue mounting?

In a first, the DGCA has acknowledged that unfortunate instances of pilot deaths in the recent past were “ostensibly” due to punishing schedules and cumulative impact on health and well-being of pilots, which it said was an “urgent wake up call” for the industry. There were at least three such deaths while on duty, including the death of IndiGo pilot, Manoj Balasubramani, who fell unconscious at the boarding gate after reporting for duty to operate a flight from Nagpur to Pune on August 17, 2023. He was rushed to hospital, where he passed away.

Pilots say that not only has flying increased for them in the past five years, a growing route network beyond metros has resulted in tougher combination of flights, which involve more landings and are therefore strenuous. For example, the return leg of an international flight is often combined with an additional domestic flight. There are also more red eye flights to short-haul destinations such as in the Gulf and Singapore. Add to this an uncertainty of roster, where a pilot can be called in for a flight for 4 a.m. with just a 12-hour notice. “Denying a duty in such circumstances can lead to disciplinary proceedings,” said a senior pilot of a full-service carrier. Pilots recall Jet Airways days where a printed roster was sacrosanct. There are also rostering malpractices, where pilots are compelled to work beyond their maximum duty hours or provided less rest periods than what is laid down. On March 22, the DGCA imposed a fine of ₹80 lakh on Air India after it discovered lapses during a spot check in January.

How many pilots are registered with DGCA?

Many airlines like Air India and Vistara are already grappling with pilot shortages compared to aircraft strength. As on December 2023, there were a total of 771 aircraft with various Indian airlines and 9,524 commercial pilots registered with the DGCA. Additionally, there were 67 foreign pilots too due to a shortage of commanders on certain aircraft type such as the Boeing 777. India's commercial airlines are likely to nearly double fleet size to 1,400 by fiscal year 2029-30, shows CAPA data. This will mean airlines will have to add 10,900 additional pilots by 2030, which is nearly 1,600 new pilots a year. Last year, the regulator issued 1,272 commercial pilot licences.

TECH GIANTS FACING EU SCRUTINY

The story so far:

In a slew of measures to ensure “contestable and fair markets in the digital sector” in line with the provisions of the Digital Markets Act (DMA), the European Commission on March 25 initiated ‘non-compliance investigations’ against Apple, Meta and Google’s parent Alphabet. It will also investigate Amazon’s ranking practices in its marketplace.

Where is the context of these non-compliance investigations?

The non-compliance investigations concern Alphabet’s alleged rules on steering or directing its customers to its in-house services over those of its competitors. Apple will be investigated for allegedly similar practices in its App Store, as well as the way it positions its Safari browser. Lastly, Meta will be investigated for its “pay or consent model.”



The investigations fall in with the primary objective of the DMA to better regulate ‘gatekeepers’ and ensure fairer competitive practices in the digital market space. The idea is to mitigate paradigms that may create a “bottleneck” in the digital economy and fairness in competition and consumer access.

Alphabet, Amazon, Apple, TikTok’s parent company ByteDance, and Microsoft were designated as ‘gatekeepers’ in September 2023. They were expected to fully comply with obligations under the DMA by March 7 this year. The Commission assessed the mandatory compliance reports submitted by these companies and gathered feedback from stakeholders, including in the context of workshops, before launching the investigation.

How are the steering rules non-compliant?

DMA provisions stipulate that app developers be allowed to steer consumers to offers (and services) outside the gatekeeper’s app store, free of charge.

The Commission aired its concerns about Alphabet and Apple not being fully compliant “as they impose various restrictions and limitations.” Apple has maintained that the tight integration associated with its App Store is essential to provide a “uniquely secure and seamless user experience.”

“It (DMA provisions) equates size with harm, and then imposes a one-list-fits-all set of regulatory obligations without providing an opportunity for the platform to explain, and the regulator to assess, whether — on balance — there are broader benefits to consumers or businesses,” Apple had said in an unrelated January 2020 submission.

In a blog published this January, Spotify, however, had the following to say: “For years, even in our own app, Apple had these rules where we couldn’t tell you about offers, how much something costs, or even where to buy it.” It added that with the DMA, it would be able to share details about Spotify promotions, deals and better-value payment options with consumers in the EU.

Further, the Competition Commission of India (CCI) on March 15 also ordered a detailed probe against Google for alleged discriminatory practices on its Play Store pricing policy after having discovered a prima facie violation of competition law.

What about Alphabet engaging in self-preferencing?

The Commission wants to determine whether Google search results are discriminatory; in other words, whether the search giant engages in self-preferencing for its verticals over rival services. It has stated that Alphabet’s measures to comply with the DMA may not have ensured that third-party services featured on Google’s search results page are treated in a “fair and non-discriminatory manner” in comparison to their own services.

In October 2020, the U.S. Department of Justice (DoJ) accused Google of “unlawfully maintaining monopolies through anti-competitive and exclusionary practices in the search and search advertising markets” and sought it “remedy the competitive harms.” According to the DoJ, the conduct harmed consumers by reducing the quality of their search, lowering choices, and impeding innovation. The case is ongoing.

Amazon too is facing heat for similarly tailoring the listings on its marketplace.



What about Apple enabling choice?

The Commission is looking to assess if Apple enables users to easily uninstall any pre-installed (or presently default) software applications on iOS, change default settings, and if prompts users with choice screens that allow them to effectively and easily select alternatives to the default service. The investigation emanates from the Commission's concern that Apple's measures may be preventing users from "truly exercising their choice of services with the Apple ecosystem." In other words, concerns over ecosystem captivity.

What are the concerns about Meta's model?

Meta introduced a subscription model that offered people in EU, EEA and Switzerland the choice to use Facebook and Instagram without any ads. Alternatively, they could continue using these services for free while seeing ads relevant to them; in other words, consenting to personalised advertising.

The model, however, did not convince the Commission. It held that the model's "binary choice" may not provide "a real alternative in case users do not consent, thereby not attaining the objective of preventing the accumulation of personal data by gatekeepers."

How will non-compliant companies be penalised?

The companies face the prospect of being fined up to 10% of their global turnover or 20% in case of repeated infringement(s). Additionally, should the investigation come across any "systematic infringement," the companies may be asked to sell a business or parts of it. A ban from acquiring related additional services could also be possible. The announcement of the investigation has not enthused the ecosystem's participants or stakeholders. Concerns continue to exist if overlapping prerogatives can be addressed.

DreamIAS



LIFE & SCIENCE

CAN AI HELP IN NAVIGATING MENTAL HEALTH?

The story so far:

We live in a world where therapy is a text away. Natural language processing (NLP), a branch of Artificial Intelligence (AI), enables computers to understand and interpret human language that mirrors human comprehension. In mental healthcare, we are already seeing a rapid evolution of use cases for AI with affordable access to therapy and better support for clinicians.

How does it help patients?

External and internalised stigma persists across demographics and countries. Through text-based platforms and virtual mental health assistants, NLP programs provide privacy and anonymity that can improve help-seeking behaviour. For users, the chatbot can support them in reframing thoughts, validating emotions and providing personalised care, especially in the absence of human support. Not only is this beneficial when a therapist is not accessible, but it also helps improve patient health outcomes just as well as in-person care. Mental health treatment requires continuity of care to take a more holistic approach and reduce instances of relapse. For example, digital therapy assistants can help point you to resources for healthier coping in instances of distress, grief, and anxiety. Since these chatbots are scalable, cost-effective, and available 24x7, they could therefore be integrated into existing health programs. Additionally, companies building chatbots must proactively expand the scope of service delivery through partnerships and collaborations for follow-up services such as referrals, in-person treatment, or hospital care, where needed.

How does it help clinicians?

Mental health illnesses have complex causes of origin, making it difficult to design a straightforward protocol or make a quick and accurate diagnosis. By using vast datasets, AI tools can help summarise information including clinical notes, patient conversations, neuroimages, and genetic information. This can help clinicians get up to speed with the entire patient history, saving valuable time during sessions.

Recent advancements in NLP programs have demonstrated the ability to forecast responses to antidepressants and antipsychotic drugs by analysing brain electrical activity, neuroimages, and clinical surveys. Such predictive capability can streamline treatment decisions and minimise the risk of ineffective interventions. Some chatbots are also creating e-triaging systems that can significantly reduce wait time and free up valuable clinical person-hours. With improving bandwidth, mental health providers can devote a higher proportion of time to severe mental illnesses, such as bipolar disorder and schizophrenia, where specialised care is required.

What's next?

There is immense potential and promise in these applications and we expect to see a growing adoption. Going forward, companies must refine these applications by using more diverse population-wide datasets to minimise bias. These programs can also incorporate a wider set of health indicators for a comprehensive patient care experience. We expect greater success of these programs if they are guided by a conceptual framework for improving health outcomes and rigorously and continuously tested.



In the pursuit of innovation, governments and institutions need to prioritise user safety and well-being by ensuring adherence to global compliance standards. As these applications evolve, we must persist in updating our beliefs, governing laws and regulations, and demanding better standards of care.

AI HELPS CLASSIFY NEEM FRUITS BASED ON AZADIRACHTIN CONTENT

Researchers at the School of Biotechnology, Jawaharlal Nehru University, New Delhi have developed an Artificial Intelligence-based tool to predict the level of metabolite content in neem fruits as either low or high based on images of neem leaves and fruits. The AI-based approach makes the use of expensive and cumbersome analytical equipment like high-performance liquid chromatography (HPLC) redundant. The classification of fruits can be carried out in the field even by untrained people. The results have been posted on a preprint server; preprints are not peer-reviewed.

The key metabolite of neem fruits is azadirachtin, which is used as a biopesticide. However, azadirachtin content in the seed kernel varies from one tree to another. Since the fruits with different concentrations of azadirachtin are mixed and bagged together in the field, the final azadirachtin content in each sack becomes low. Currently, there is no easy tool to evaluate the azadirachtin content level (high or low) in neem fruits inexpensively. Therefore, only a few fruits from each sack with varying azadirachtin content or from a single batch of multiple sacks are taken to determine the azadirachtin content using HPLC.

ABEL PRIZE: A NOBEL FOR MATHEMATICIANS

WHAT IS IT?

The Abel Prize for 2024 has been awarded to French mathematician Michael Talagrand for “contributions to probability theory and functional analysis, with outstanding applications in mathematical physics and statistics”.

Every year, the King of Norway awards the Abel Prize to at least one scholar who has made a significant contribution to mathematics. The Government of Norway has been presenting the prize since 2003, and has modelled it after the Nobel Prizes, awarded in neighbouring Sweden, including a cash prize of 9 million Norwegian kroner (approximately Rs 7 crore) for the laureates.

This said, the idea for the prize was first floated back in 1899, after the Norwegian mathematician Marius Sophus Lie found out that Alfred Nobel’s will didn’t include a prize for mathematics. The year 1899 was also the birth centenary of Niels Hendrik Abel, a famous Norwegian mathematician after whom the prize came to be named. The Abel Committee selects each year’s winners.

Dr. Talagrand’s work in particular has been credited with “making random processes more predictable,” as one Nature article put it. According to his biography on the Abel Prize website, Dr. Talagrand couldn’t see in one eye as the result of a genetic condition. A decade later, when he developed trouble in his other eye, he became scared and studied hard at school, eventually discovering his knack for mathematics.



WHY GOOD FRIDAY IS OBSERVED, AND WHY ITS DATE CHANGES EVERY YEAR

Good Friday (March 29) is a solemn occasion for Christians. The day is one of remembrance, marking the crucifixion of Jesus Christ at the hands of the Romans. It is believed that Jesus rose from the dead the following Sunday, which is commemorated in the form of the joyous day of Easter.

Why does the holiday have the “Good” prefix despite its origins? What do legends say about the crucifixion and its fallout, and why does the date of Good change every year? We explain.

Why is Good Friday observed?

The story of Jesus Christ focuses on the ideals of sacrifice and forgiveness. Jesus of Nazareth (in present-day Israel) was believed to have lived a humble life as a carpenter more than 2,000 years ago. At the time, Judaism was the prevalent religion in the region and the Romans ruled the land.

Jesus began preaching messages of compassion and brotherhood. He gained a few followers in the process, but his criticism of the powerful classes for stifling the weak led the Roman authorities to arrest him. His preaching and questioning were also seen as a threat to the existing social, religious and political setup.

After a few years of spreading his ideas, Jesus went to Jerusalem for the Jewish holiday of Passover. He told his disciples during his final meal or The Last Supper that authorities would come after him soon. His disciple Judas Iscariot would betray his trust, leading the Romans to arrest him on charges of blasphemy and treason.

Jesus agonised on the cross for six hours and then gave up his spirit. In the evening, his body was taken down from the cross by a secret follower, who wrapped the body in a clean linen shroud, and placed it in his own new tomb that had been carved in the rock. The following Sunday, his tomb was found to be empty.

Since then, many people reported witnessing Jesus’s presence and these incidents were seen as proof of his divinity. This is why the Sunday that follows Good Friday is celebrated as Easter, marking the resurrection of Christ.

Why is it called ‘Good’ Friday?

There are several theories as to why the word “Good” is associated with the day. Fiona MacPherson, senior editor at the Oxford English Dictionary, told the BBC earlier that in older times, it was thought the word simply “designates a day on (or sometimes a season in) which religious observance is held”. The report adds that The Oxford English Dictionary also explains “Good” in this context as referring to “a day or season observed as holy by the church”.

It also mentions a few other possible sources. The Baltimore Catechism, a US Catholic school text, says Good Friday is good because Christ “showed His great love for man, and purchased for him every blessing”.

The Catholic Encyclopedia suggests “God’s Friday” or Gottes Freitag in German as an origin. The report says further that the day was called “Long Friday by the Anglo-Saxons and is referred to as such in modern Danish”.



Why do the dates for Good Friday differ every year?

While the day of observance is fixed, the dates of Good Friday change every year depending on the full Moon. According to the Royal Museums Greenwich website, “The simple standard definition of Easter is that it is the first Sunday after the full Moon that occurs on or after the spring equinox.”

Based on the Earth’s position in its orbit around the Sun and the degree of its axis tilt, the spring equinox is the day when both the northern and southern hemispheres receive the same amount of light and darkness from the Sun.

But this is not an exact science. To set a date, March 21 is assumed to be the spring equinox every year, even though the “real” date may be a day early or later.

“The reasons for this are that the method is then independent of longitude on the Earth and is thus independent of time zone. It also allows the date of Easter to be calculated in advance regardless of the actual motion of the Earth around the Sun,” the website says.

Nevertheless, some denominations may follow different calendars. The Eastern Orthodox Church, dominant in countries such as Russia and Greece, sees Easter celebrated around late April or May, as they traditionally followed the Julian calendar.

How is Good Friday observed?

Pastor Yonzon says that the day is observed through different traditions across geographies. In some places, a re-enactment of the crucifixion is done, or a Church service is held. “Essentially, Christ the Lord is remembered on the day, we pray and express our devotion through offerings, and feel gratitude for his sacrifice. His words and teachings are also recalled,” he says.

Several other days are also observed in this period. The first day of the Holy Week, the Sunday the week before Easter Sunday, is called Palm Sunday. It is when Jesus is believed to have entered Jerusalem, and where his followers heralded his presence with a procession of palm leaves.

GENOME DATA SHEDS LIGHT ON HOW HOMO SAPIENS AROSE IN AFRICA

Our species arose in Africa more than 300,000 years ago, with the oldest-known Homo sapiens fossils discovered at a site in Morocco called Jebel Irhoud, located between Marrakech and the Atlantic coast.

But the scarcity of Homo sapiens fossils from early in our evolutionary history and the geographical spread of those remains in Africa in places like Ethiopia and South Africa have made it difficult to piece together how our species emerged and dispersed across the continent before trekking worldwide. A new study tapping into genome data from modern-day African populations is offering insight into how this may have unfolded.

The research indicated that multiple ancestral groups from across Africa contributed to the emergence of Homo sapiens in a patchwork manner, migrating from one region to another and mixing with one another over hundreds of thousands of years. It also found that everyone alive today can trace their ancestry to at least two distinct populations that were present in Africa dating back about a million years.



The findings did not support a longstanding hypothesis that a single region in Africa gave rise to Homo sapiens or a scenario involving mixture with an unidentified closely related species in the human evolutionary lineage within Africa.

2024 RECORDS HOTTEST-EVER JANUARY AND FEBRUARY

This year's February was the hottest February ever. So was this year's January. This is in continuation of a streak: the last seven months of 2023 also marked record highs for those months. Records have been set and broken in successive years, which means that the world is heating up.

Not only are temperatures rising, but they are also rising at a faster rate than ever before. The gap between the record temperatures set in 2023 and 2024 and the old records from previous years which were broken are considerably wide, showing that the rise in temperature is rapid.

In February 2024, the average temperature was 13.54°C, the warmest ever for any February. The previous record was set in 2016 when the average temperature touched 13.42°C. That record broke the previous record of 13.33°C, set in 2020.

In January 2024, the average temperature was 13.14°C, again the warmest ever for any January. The previous record was set in 2020 when it touched 13.02°C. That broke the previous record of 12.99°C, which was set in 2016.

On February 15, 2024 South Sudan in east Africa, and Ghana and Togo in west Africa, crossed the 30°C mark, which makes them the hottest countries on that date. In 62 countries, the average temperature on that day was over 25°C. In 41 countries, including India, it was over 20°C. India's average temperature on that day was 20.17 °C.

CAN 'GOOD SOUNDS' HELP CORAL ISLANDS RECOVER FROM BLEACHING?

Climate change is the most serious environmental problem facing the world today. One of the main reasons for this is the global warming caused by the extraction of coal and oil, which have been underground for millennia, and burning them for industrial and non-industrial purposes to generate energy. The effects of these activities were exacerbated by other causes of global warming, such as deforestation.

Global warming has many consequences, including rising sea levels and changes in the frequency of extreme weather. Another is the destruction of coral reefs. India's Lakshadweep islands for instance are islands formed on such reefs.

Coral reefs have started to die

Coral reefs are built by a type of organism that, when it accumulates, forms reefs and islands. They live in large colonies. Corals have a symbiotic relationship with microscopic algae called zooxanthellae, which live in the corals' tissues. Life becomes tough when the temperature of the water around them rises. When it does, the corals expel the zooxanthellae. An important visual symptom of these effects is that the colour of the coral reef changes, and subsequently they die off in droves. This event is called bleaching.

However, not all coral bleaching events are due to warm water. Ocean acidification – which is when the pH of the water drops as more carbon dioxide dissolves in it – is another well-known



cause. More acidic water reduces the availability of calcium minerals that the corals need to build and repair their exoskeletons.

In many parts of the world, coral reefs have started to die due to global warming experienced over the years. The U.S. lost half of its coral reefs in the Caribbean in one year in 2005 due to a large-scale bleaching event after warm waters around the Virgin Islands and Puerto Rico expanded southward. When scientists collated satellite data of the region from the previous 20 years, they were able to confirm that the 2005 event exerted more thermal stress than those in the previous 20 years combined.

A source of hope

The Great Barrier Reef in Australia is the largest coral reef in the world. Recently many people there protested strongly against a plan to open a new coal mine because they were worried about the survival of the reef – not because the mine would directly affect the reef but because of the effects of burning fossil fuels at large.

Many coral islands like our Lakshadweep are inhabited by people. The destruction of these coral reefs will naturally affect the people there. A rising sea level due to climate change is another problem for them. Many small island countries like Tuvalu and Vanuatu are facing the threat of submergence and have articulated their concerns at international climate conferences. Their submergence is a certainty now; the only question is when it will happen. Therefore, it is very scary that the coral reefs themselves are being destroyed and, axiomatically, any chance of saving the corals can and does become a source of hope.

It is against this background that about 5,000 scientists gathered in New Orleans, in the U.S., in February this year for the American Geophysical Union's biennial 'Ocean Sciences' meeting. Here, Amy Apprill, a scientist at the Woods Hole Oceanographic Institute in Massachusetts and who studies coral reefs, provided information about a study she had been part of.

The coral polyps

To understand this study, we need to first understand what a coral reef is. Coral reefs are built by an organism called a polyp. A coral group is a colony of a large number of genetically identical polyps. Each polyp is a sac-like animal, usually a few millimeters wide and a few centimeters tall. It has a set of tentacles surrounding a mouth-like opening. Polyps are gregarious: they like to socialise.

Every polyp also sheds an exoskeleton at its bottom and over many generations this discarded substance accumulates to form a large structure up to several metres wide. The polyps organise their lives around this structure. A coral reef is formed when a large number of polyps collects in this way. Polyps use sound to communicate with each other. Naturally, the sound of a healthy colony will differ from that of an unhealthy colony. Dr. Apprill and her team used this distinction in their new study.

The sound of a health colony

The investigators set about examining whether a degraded reef could be enriched by replaying healthy reef sounds. They conducted a series of field studies in the Virgin Islands of the U.S., where they quantified the settlement rates of three species of corals with two different breeding strategies.



They found that in degraded coral reefs, the settlement rate increased when such sounds were played (using a novel underwater speaker system). They also reported that the settlement rate was higher closer to the speaker and reduced as one moved away from the speaker, indicating the impact of the sounds played.

Finally, it would be a mistake to think the researchers have solved the reef settlement problem posed by climate change. Their study was just an experiment. If what they did is tested repeatedly and at least a good fraction of instances are successful, then we can decide that their technique can help in practice. But we still don't know what problems might arise when this project is implemented on a large scale to save coral reefs. We also need to find out the volume at which the sound has to be played and if there are any other parameters to be controlled.

In sum, the new study is just a pointer, even if also a positive one.

HOUSEHOLDS ACROSS THE WORLD WASTE 1 BILLION MEALS A DAY, SAYS UN REPORT

Households across the globe wasted over one billion meals a day in 2022, even as 783 million people struggled with hunger and a third of humanity faced food insecurity, according to the Food Waste Index Report 2024, a study jointly authored by the United Nations Environment Programme (UNEP) and WRAP (Waste and Resources Action Programme), a U.K.-based non-profit.

The report, released ahead of the International Day of Zero Waste (March 30), noted that in 2022, there were 1.05 billion tonnes of food waste generated (including inedible parts), amounting to 132 kilograms per capita and almost one-fifth of all food available to consumers. "Out of the total food wasted in 2022, 60% happened at the household level, with food services responsible for 28%, and retail 12%," the report observed.

The report stressed the importance of expanding and strengthening data infrastructure to enable the tracking and monitoring of food waste, pointing out that "many low- and middle-income countries continue to lack adequate systems for tracking progress to meet Sustainable Development Goal 12.3 of halving food waste by 2030, particularly in retail and food services". At present, only four G-20 countries (Australia, Japan, U.K., U.S.) and the European Union have food waste estimates suitable for tracking progress to 2030.

Contrary to popular perception, food waste was not a "rich country problem", the report stated, with observed average levels of household food waste for high-income, upper-middle, and lower-middle-income countries differing by just 7 kg per capita. "Hotter countries appear to generate more food waste per capita in households, potentially due to higher consumption of fresh foods with substantial inedible parts and a lack of robust cold chains," the report noted.

Detailing the link between food waste and climate change, the report found that food loss and waste generated "8%-10% of annual global greenhouse gas (GHG) emissions — almost five times that of the aviation sector — and significant biodiversity loss by taking up the equivalent of almost a third of the world's agricultural land". It estimated the toll of both food loss and waste on the global economy at \$1 trillion.

Another trend revealed by the data was that compared to urban areas, rural ones generally wasted less food, due to "greater diversion of food scraps to pets, livestock, and home composting". The report urged governments to "raise climate ambition by integrating food loss and waste" into their Nationally Determined Contributions.



THE NEED TO CURB BLACK CARBON EMISSIONS

The story so far:

At the COP26 climate talks in Glasgow in November 2021, India pledged to achieve net-zero emissions by 2070, positioning itself as a frontrunner in the race to carbon neutrality. According to the Ministry of New and Renewable Energy, India had installed a renewable energy capacity of over 180 GW by 2023 and is expected to meet its target of 500 GW by 2030. While carbon dioxide mitigation strategies will yield benefits in the long term, they need to go hand-in-hand with efforts that provide short-term relief.

Why is black carbon relevant?

Black carbon is the dark, sooty material emitted alongside other pollutants when biomass and fossil fuels are not fully combusted. It contributes to global warming and poses severe risks. Studies have found a direct link between exposure to black carbon and a higher risk of heart disease, birth complications, and premature death. Most black carbon emissions in India arise from burning biomass, such as cow dung or straw, in traditional cookstoves.

According to a 2016 study, the residential sector contributes 47% of India's total black carbon emissions. Industries contribute a further 22%, diesel vehicles 17%, open burning 12%, and other sources 2%. Decarbonisation efforts in the industry and transport sectors in the past decade have yielded reductions in black carbon emissions, but the residential sector remains a challenge.

Has PMUY helped?

In May 2016, the Government of India said the Pradhan Mantri Ujjwala Yojana (PMUY) would provide free liquefied petroleum gas (LPG) connections to households below the poverty line. The primary objective was to make clean cooking fuel available to rural and poor households and reduce their dependence on traditional cooking fuels. The PMUY has established infrastructure to go with LPG connections, including free gas stoves, deposits for LPG cylinders, and a distribution network. The programme has thus, been able to play a vital role in reducing black carbon emissions, as it offers a cleaner alternative to traditional fuel consumption. The programme has provided connections to over 10 crore households as of January 2024.

However, in 2022-2023, 25% of all PMUY beneficiaries — 2.69 crore people — availed either zero LPG refill or only one LPG refill, according to RTI data, meaning they still relied entirely on traditional biomass for cooking. The Hindu found in August 2023 that the average PMUY beneficiary household consumes only 3.5-4 LPG cylinders per year instead of the six or seven a regular non-PMUY household uses. This means up to half of all the energy needs of a PMUY beneficiary household are still met by traditional fuels, which have high black carbon emissions. A shortage of LPG and higher usage of traditional fuels also affect women and children disproportionately. They are more prone to higher levels of indoor air pollution, causing many health issues and leading to premature deaths.

What is the government's role?

The key to enhancing the quality of life in these areas lies primarily in securing access to clean cooking fuels. While the future holds the promise of meeting energy needs in rural areas through renewable sources, the immediate benefits for rural communities are poised to come from using LPG.



In October 2023, the government increased the LPG subsidy to ₹300 from ₹200. But with rapid increase in LPG prices over the last five years, the cost of a 14.2-kg LPG cylinder, even with an additional subsidy, is still about ₹600 per cylinder. Most PMUY beneficiaries find the price too high, more so since cow dung, firewood, etc. are 'free' alternatives. Prime Minister Narendra Modi announced a further price reduction of ₹100 in March 2024, but this subsidy is expected to be temporary. The government has estimated that about ₹12,000 crore will be spent on PMUY subsidies in 2024-2025, a figure that has continuously increased each year since the scheme's inception. While it is the rightful duty of the government to make clean fuel affordable through subsidies, the problem of low refill rates will persist if availability issues are not addressed.

Another big hurdle to the PMUY's success is the lack of last-mile connectivity in the LPG distribution network, resulting in remote rural areas depending mostly on biomass. One potential solution to this issue is the local production of coal-bed methane (CBM) gas by composting biomass. CBM is a much cleaner fuel with lower black-carbon emissions and investment. Panchayats can take the initiative to produce CBM gas locally at the village level, ensuring every rural household can access clean cooking fuel.

What about the global stage?

As India navigates its responsibilities on the global stage towards long-term decarbonisation, there is an urgent need to act. Prioritising black carbon reduction through initiatives such as the PMUY scheme can help India become a global leader in addressing regional health concerns and help meet its Sustainability Development Goal of providing affordable clean energy to everyone and contributing to global climate mitigation.

Recent estimates have indicated that mitigating residential emissions will avoid more than 6.1 lakh deaths per year from indoor exposure to air pollution.

HOW MUCH SHOULD DEVELOPED COUNTRIES PAY FOR CLIMATE ACTION?

The 2022 climate change conference in Sharm el-Sheikh decided to set up a Loss and Damage Fund to help developing countries recover from climate disasters.

The Dubai conference last year was all about Global Stocktake, or GST, a review of ongoing climate action, which resulted in the first-ever explicit acknowledgement of the need to "transition away" from fossil fuels, and a promise to triple global renewable energy capacity by 2030.

This year, the focus is on finance. The expression that is likely to be heard most frequently in climate conversations and at COP29, scheduled for November 11-24 in Baku, Azerbaijan, is NCQG — or New Collective Quantitative Goal (on finance).

What is the New Collective Quantitative Goal?

NCQG is a convoluted way to describe the new amount that must be mobilised by developed countries every year from 2025 onward to finance climate action in developing countries. This new amount has to be higher than the \$100 billion that developed countries, collectively, had promised to raise every year from 2020, but had failed to deliver.

NCQG is extremely important for developing countries, and discussions on this new amount have been ongoing for a couple of years at least. At a two-day meeting that concluded in Copenhagen,



Denmark, on March 22 — the first minister-level climate meeting for this year — some technical work to arrive at the NCQG was finalised.

How much money is required to ensure effective climate action?

It has been clear for some time now that the biggest hurdle to a significant scale-up in global climate action is the unavailability of adequate finance, especially in developing countries.

The scale of annual climate finance flows has always been considerably less than the \$100 billion that the developed countries had promised to mobilise every year from 2020 onward. But even if that amount were being made available, it would be only a small fraction of the money that is required to enable actions that would keep the world on the 1.5 degree Celsius pathway at least until 2030.

Assessments of current financial requirements run into several trillions of dollars every year.

In 2021, UN Climate Change, the secretariat of the United Nations Framework Convention on Climate Change (UNFCCC), said in a report that developing countries would require a total of about \$6 trillion annually between then and 2030 just to implement their climate action plans.

An updated version of that report is supposed to come out later this year, and is expected to raise this figure much higher.

The final agreement at Sharm el-Sheikh included some estimates of the scale of financial requirements. It said that a global transition to a low-carbon economy would likely require about \$4-6 trillion every year until 2050. Ensuring a tripling of renewable energy capacity, as agreed in Dubai, is estimated to cost \$30 trillion until 2030, according to the International Renewable Energy Association (IRENA).

Of course, these are not mutually exclusive sets of requirements. There could be considerable overlaps. But \$5-7 trillion every year would mean deploying about 5-7% of the global GDP to climate action. A few years ago, the estimated requirements used to add up to just about 1-1.5% of global GDP. This shows the rapidly rising cost of inaction.

What are the prospects for a realistic new annual climate finance target?

At this point, even the possible amounts under discussion are not in the public domain. But it would probably be too much to expect that the developed countries, which have been unable to mobilise even \$100 billion a year until now, would commit to raising an amount that is even remotely close to the assessed requirements.

In a recent submission made to UN Climate Change, India called upon developed countries to ensure that the NCQG was “at least US\$1 trillion per year, composed primarily of grants and concessional finance”. India’s submission was one of several inputs that will feed into the ongoing discussions on the NCQG.

At the Copenhagen ministerial meeting last week, Simon Stiell, Executive Secretary of UN Climate Change, urged the developed countries to make climate finance “bigger and better”.

“We are talking trillions, not billions. That is going to require more from all sources and serious conversations about making new innovative sources real, rather than just words on a page,” he said.



UN Climate Change, which organises dozens of climate meetings every year and facilitates the implementation of various decisions and agreements, depends heavily on contributions from countries and voluntary organisations for carrying out its work.

How will this money be used?

The new amount, even if far from sufficient for the climate challenge the world faces, will be higher than the current commitment of \$100 billion, since that is the mandate of the NCQG.

However, the delivery of that amount will be critical. Even \$100 billion was considered a decent sum when it was promised back in 2009 — and it could have made a substantial difference if it had been delivered in full in time (from 2020 onward).

The developing countries would like to make sure that a transparent and inclusive process is instituted to monitor and measure whatever amount is finally agreed upon. Unlike the \$100 billion figure, which was offered without any consultations, the NCQG will be the result of negotiations, and countries will have better control over compliance.

The way the new sum is distributed across different kinds of needs — mitigation, adaptation, loss and damage, and several others — will also be important. Climate finance flows are currently heavily skewed in favour of mitigation actions, while developing countries have been demanding that more money be made available for adaptation and other activities.

WHY IS CHOLESTEROL RISING AMONG THE YOUNG?

Many of my patients in their early 20s do not believe that they have high cholesterol till they see their lipid profile reports. Cholesterol has long been associated with older age groups but a worrying trend has emerged in recent years – a significant rise in cholesterol levels among the younger population. This silent health issue is often overlooked as high cholesterol rarely presents noticeable symptoms until it's too late.

Most importantly, the cholesterol buildup could have begun at a younger age, in the teens even, but the patients have not felt any anomaly until they crossed into their 20s. That's why you have so many youngsters report heart attacks caused by plaques, a result of high cholesterol in their blood.

What does cholesterol do and what's the ideal range?

Cholesterol is a waxy substance made by the liver that is necessary for producing hormones, vitamin D and bile salts, which play a role in digestion. It is carried as lipoproteins, high-density lipoprotein (HDL) and low-density lipoprotein (LDL). HDL is known as the “good cholesterol,” and ideally should be 50mg/dL or higher. The amount of LDL, or “bad cholesterol,” in your body should be kept low. Specifically, LDL cholesterol should be less than 100 mg/dL for Indians, who are more prone to heart disease than other populations. An LDL reading of 130 to 159 mg/dL is categorized as “borderline high,” 160 to 189 mg/dL is “high,” and a reading of 190 mg/dL or above is considered “very high.”

What causes cholesterol spike in the young?

This is linked to lifestyle and dietary choices, beginning with that packet of chips in your childhood. The prevalence of processed and fast foods, high in saturated fats and trans fats, has skyrocketed in recent decades. Unhealthy dietary habits, combined with a sedentary lifestyle and



lack of physical activity, create the perfect storm for cholesterol build-up in the body. So your liver cannot handle the overload of fat or flush them out. Furthermore, the convenience of readily available sugary drinks and snacks has led to increased consumption of added sugars, which can contribute to high triglyceride levels and low levels of HDL (good) cholesterol. This imbalance in cholesterol levels can significantly increase the risk of heart disease and other related health issues.

Having a family history or diabetes might also affect your numbers. A condition known as diabetic dyslipidemia can raise both your LDL (bad) cholesterol and lower your HDL (good) cholesterol.

The invisible threat

One of the most concerning aspects of high cholesterol in young people is its asymptomatic nature. This leads to a false sense of security, allowing the condition to progress unchecked until serious complications arise.

High cholesterol can lead to a gradual buildup of plaque in the arteries, a condition known as atherosclerosis. This narrowing of the arteries can restrict the blood flow and increase the risk of heart attacks, strokes and other cardiovascular issues. The damage LDL (bad cholesterol) does to the arteries is cumulative and irreversible.

Early detection and prevention

While high cholesterol can lead to heart disease, the elevated level itself does not cause any symptoms. That's why young adults 20 years and older should get their cholesterol checked every five years even if they look fit. And if they show a tendency, they should check it every year.

Also many people mistakenly link high cholesterol to obesity. Even thin people can have high cholesterol. By identifying elevated cholesterol levels early on, appropriate lifestyle modifications and, if necessary, medical interventions, you can reduce the risk of long-term complications. Focus on a balanced diet rich in fruits, vegetables, whole grains and lean proteins. Regular physical activity and maintaining a healthy weight are also crucial for managing cholesterol levels. Additionally, quitting smoking and limiting alcohol consumption can significantly improve cardiovascular health. If your levels are so high as to warrant use of cholesterol-lowering medication like statins, lifestyle changes can boost their efficacy.

BACTERIA'S ROLE

Does a specific bacteria subtype drive colorectal cancer progression?

Researchers have found that a specific subtype of a microbe commonly found in the mouth can travel to the gut and grow within colorectal cancer tumours. This microbe is also a culprit for driving cancer progression and leads to poorer patient outcomes after cancer treatment. The findings could help improve therapeutic approaches and early screening methods for colorectal cancer, which is the second most common cause of cancer deaths in adults in the U.S. Examining colorectal cancer tumours removed from 200 patients, researchers measured levels of *Fusobacterium nucleatum*, a bacterium known to infect tumours. In about 50% of the cases, they found that only a specific subtype of the bacterium was elevated in the tumour tissue compared to healthy tissue. Patients with colorectal tumours containing this bacterium have poor survival and poorer prognosis compared with patients without the microbe.



CAN A PIG'S KIDNEY WORK FOR A TRANSPLANT? EXPERTS EXPLAIN WHAT IT MEANS FOR THOSE AWAITING DONORS

Instead of waiting in a years-long queue, could a person in need of a kidney transplant get it from a farm pig instead? Backed by gene-editing tools like CRISPR-Cas9, scientists have renewed their effort to make this a reality over the last couple of years. That happened a week ago with the 62-year-old Richard Slayman receiving a genetically modified kidney in the United States.

While there are a lot of unknowns, there is a sense of cautious optimism about xenotransplantation — transplanting organs from animals to humans — as it could be the solution to the current organ shortage. This idea is not new — what has enabled scientists and doctors now are the gene editing tools that have allowed them to make the animal organs more compatible with humans. Scientists genetically modified the kidney that was given to Slayman in three key ways.

What Is Gene Modification?

Explaining the need for gene modification, Dr Arvinder Soin, chairman, Medanta Institute of Liver Transplantation, says, “First, certain genes in a pig carry the code to produce sugars that have antibodies, which our immune system can immediately recognise. These have to be edited out to prevent acute rejection. Second, there is a specific pathway, called complement-mediated rejection, which is activated when an organ is transplanted across species. When activated, it can lead to clotting, which stops the blood supply to the organ and it dies. The scientists have added complement inhibitor and anti-clotting genes from humans to prevent that. Third, pigs have certain viruses coded in their genes called porcine endogenous retroviruses (PERVs) and when humans receive pig organs they can contract these infections. These are not common otherwise in human beings. So this trait too has to be edited out.”

There were 69 genome edits that the scientists did in the pig kidney in total. These edits were done by a xenotransplantation therapy company called eGenesis founded by a Harvard Medical School geneticist George Church. His team, in fact, solved one of the key challenges to using pig organs in humans — that of PERVs causing infections in humans. His lab published the results of the genetic engineering feat of eliminating all 62 PERVs in the pig genome in one swoop in 2015. This was described as “the most widespread CRISPR editing feat to date,” with the previous record being of just six edits at one go.

Challenges of pigs as the chosen animal donor

Pigs are chosen for xenotransplants because the size and function of their organs match that of humans very well. “There are, of course, significant challenges that come with using pig organs. First of all, the human immune system is extremely complex. The only organ that it recognises as its own is the one that comes from an identical twin. The next best match comes from siblings and then parents. We have brought down rejection over the years by better managing the anti-rejection medicines. Now, imagine introducing genes that are not even of human origin. That is a big challenge,” says Dr Harsha Jauhari, a renowned kidney transplant specialist from Sir Ganga Ram Hospital. “The use of pig organs also introduces infections that don’t happen in humans now. And it is not just about one person; these infections can then start transmitting in humans. While it is a good start, it is still years from becoming the standard of care,” he adds.



Slayman lived with Type-2 diabetes and hypertension, putting him at risk of chronic kidney disease. He received a kidney transplant for the first time in 2018. However, the kidney started showing signs of failure after five years and he was back on dialysis — a procedure where the machine takes over the kidney's function of removing waste from the body. The use of pig kidney was allowed on compassionate grounds when he needed a kidney transplant again.

With the prevalence of lifestyle diseases such as diabetes and hypertension on the rise, there is an increasing demand for organ transplants. An estimated 2 lakh people in India reach end-stage kidney failure every year and only around 12,000 manage to get a transplant.

What are chances of survival?

The big question, however, is how long can Slayman survive on the pig kidney. “We still don't know how many years this kidney can survive but based on our preclinical research, we are aiming at years — more than two years,” said Dr Tatsuo Kawai, surgeon at Massachusetts General, who led the surgery.

There have only been two heart transplants using pig organs. Both the patients died within a couple of months after transplantation. There have also been experiments with pig liver and kidney in brain dead patients. In fact, doctors from China transplanted the first genetically modified pig liver around the same time in a 50-year-old deceased person.

While Dr Jauhari imagines xenotransplantation can be a solution for the future, he remains optimistic about other alternatives coming in first. Scientists have been working on growing organs in laboratories with the help of stem cells, which are capable of becoming other types of cells. “And, we might also be able to control many of the diseases that necessitate transplants by then,” says Dr Jauhari.

HOW THE H5N1 BIRD FLU THREATENS THE VERY EXISTENCE OF BIRDS AND MAMMALS

Since 2020, a highly pathogenic type of bird flu, H5N1, has been spreading across the globe, posing an existential threat to birds and wildlife. The virus has infected birds in more than 80 countries (as of December 2023) and resulted in culling of millions of chickens and turkeys at commercial poultry farms. It also struck numerous species of wild birds, such as gulls and terns, killing them by thousands.

The more worrying sign, however, is the rapid spread of the flu — once largely confined to birds — among mammals. For instance, tens of thousands of seals and sea lions in different parts of the world have died due to the disease. The infection has also infiltrated mainland Antarctica for the time in history.

In January, Dr Chris Walzer, the Wildlife Conservation Society's Executive Director of Health, in a statement, said: “It (H5N1) has infected over 150 wild and domestic avian species around the globe as well as dozens of mammalian species. The bird flu outbreak is the worst globally and also in US history, with hundreds-of-millions of birds dead since it first turned up in domestic waterfowl in China in 1996.”

Here is a look at what bird flu is, how it is impacting different kinds of animals, and why the virus is spreading at such a large scale.



What is bird flu?

Bird flu, also known as avian flu, refers to an infectious viral illness that mainly infects and spreads among poultry and some wild birds. There are different strains of bird flu virus, which have been circulating for a very long time among at least 100 bird species, including wild waterfowl, such as ducks and geese, without much harming them.

From time to time, a form of the flu virus jumps from wild birds to poultry farms, and replicates in cramped warehouses of farmed birds. It then quickly evolves into a highly pathogenic flu virus that causes a larger wave of illness and death than usual among birds.

The currently circulating type of H5N1 is one such highly pathogenic flu virus. It has “descended from a virus that caused an outbreak on a goose farm in Guangdong, China, in 1996. That virus — one of a type of virus known as H5N1 — was highly pathogenic and killed more than 40 per cent of the farm birds it infected,” according to a report by Vox.

The new version of H5N1 first emerged in Europe in 2020 and then rapidly reached Europe, Africa, and Asia. By late 2021, it had spread to North America and in the fall of 2022, it appeared in South America. In February 2024, the virus stormed through mainland Antarctica.

How has H5N1 impacted animals across the world?

Some wild birds, which are already on the verge of extinction, have also been hit. At least 21 of the endangered California condors have died from the virus in 2023 alone, which is nearly 6 per cent of the population of the roughly 330 birds that were believed to live in the wild as of the end of 2021, according to the US National Park Service, The Wildlife Society said.

The biggest concern is the spread of the virus among mammals, though. Outbreaks among foxes, pumas, skunks, and both black and brown bears in North America have been reported. In Spain and Finland, farmed minks have been infected.

The worst affected are marine mammals. More than 20,000 sea lions and a handful of dolphins have died in Chile and Peru due to the infection. There have been reports of deaths of seals on the east and west coasts of the US. Thousands of elephant seals have also been killed in Argentina.

Humans are also at risk but they rarely contract bird flu. Most of the cases of human infection involve people who have come in contact with a large number of sick birds at poultry farms. This means that humans are likely to get infected when there is a huge viral load.

What's behind the large-scale spread?

The exact factors behind the large outbreaks of the bird flu are still largely unknown. Some scientists, however, suggest that one reason could be climate change.

According to studies, soaring global temperatures impact the behaviour of birds in such a way that it exacerbates the spread of the flu. These birds are forced to move into new territories and mix with species that they usually don't interact with, which possibly boosts the chances for the virus to spread even further.

Higher sea surface temperatures might also be at play. For example, warmer sea temperatures near northern Chile have led to a fall in the forage fish population and that has made sea lions



weaker and more susceptible to disease, Liesbeth van der Meer, director of the environmental group Oceana in Chile, told the Associated Press.

INACCESSIBILITY AND COST CRIPPLE EFFORTS TO TREAT SICKLE CELL DISEASE

SCD is an inherited haemoglobin disorder in which red blood cells (RBCs) become crescent or sickle-shaped due to a genetic mutation. These RBCs are rigid and impair circulation, often leading to anaemia, organ damage, severe and episodic pain, and premature death. India has the third highest number of SCD births, after Nigeria and the Democratic Republic of the Congo. Regional studies suggest approximately 15,000-25,000 babies with SCD are born in India every year, mostly in tribal communities.

According to the 2023 'Guidelines for National Programme for Prevention and Management of Sickle Cell Disease', of the 1.13 crore persons screened in different states, about 8.75% (9.96 lakh) tested positive. It is also one of the 21 "specified" disabilities listed in the Schedule of the Rights of Persons with Disabilities Act 2016.

Access to treatment a major issue

In 2023, the Government of India launched the National Sickle Cell Anaemia Elimination Mission, to eliminate SCD by 2047. At present, however, treatment and care for SCD remains grossly inadequate and inaccessible. States with a high prevalence of SCD, particularly among their most marginalised populations, are falling behind in their efforts to reach out and provide basic care to those affected.

An apposite example is the (un)availability of the drug hydroxyurea. It lessens the severity of pain, reduces hospitalisations, and improves survival rates by increasing the size and flexibility of RBCs and lowering their likelihood of becoming sickle-shaped. Yet States are largely unable to provide hydroxyurea for SCD patients, pointing to their inability to purchase, stock, and distribute this drug. Even though the National Health Mission's Essential Medicines List requires the drug to be availed at the primary healthcare level, hydroxyurea is currently only available in certain tertiary-level facilities, such as medical colleges.

Blood transfusion is another important therapy for SCD, but its availability is limited to district-level facilities. Most block-level community health centres don't offer them. Even during an emergency, families of SCD patients have to arrange for blood replacement units and pay for expensive private transport. Pain medications, from painkillers to non-steroidal anti-inflammatories and opioids, are also scarce.

Bone marrow transplantation (BMT), until recently the other cure for SCD, is out of reach for most SCD patients due to the difficulty in finding matched donors, the high cost of the treatment at private facilities, and long waiting times in public hospitals. There have been efforts in some states to improve public health facilities but it remains to be seen how successful they are at making care universally available.

Access to and equity of CRISPR

In light of this, the application of the gene-editing technology called CRISPR (short for 'Clustered Regularly Interspaced Short Palindromic Repeats') to treat SCD is important — for its novelty and promise but also for the health disparities it makes apparent.



The U.S. Food and Drug Administration recently approved two gene therapies, Casgevy and Lyfgenia, to treat SCD in people ages 12 and older. Casgevy, developed by Vertex Pharmaceuticals and CRISPR Therapeutics and also approved in the U.K., is the first CRISPR-based therapy to have received regulatory approval in the U.S. Lyfgenia, manufactured by Bluebird Bio, doesn't use CRISPR but depends on a viral vector to change blood stem-cells.

Both treatments entail collecting a patient's blood stem-cells, modifying them, and administering high-dose chemotherapy to destroy the damaged cells in the bone marrow. The modified cells are then infused into the patient through a hematopoietic stem cell transplant. The treatments are expected to take up to a year and require several hospital visits. Victoria Gray, a patient in her mid-30s from the U.S., was the first recipient of Casgevy in clinical trials. Having been free of SCD symptoms and pain for a few years, she is now seen as a symbol of hope for new therapies.

CRISPR's inventors have won a Nobel Prize and it is celebrated as a revolutionary innovation, but its treatment cost of \$2–3 million keeps it out of reach of most of those affected in countries where SCD is endemic. While researchers and policymakers are considering potential alternatives to improve access in low- and middle-income countries, such high-tech therapies require advanced care in well-resourced hospitals, too, bringing with it challenges of availability, affordability, and quality — which disproportionately affect the poor and marginalised. It raises pressing questions about equity, access, and justice in the use of gene therapies.

A LIVING WILL, SO THE TERMINALLY ILL CAN AVOID THE INDIGNITIES OF PROLONGED HOSPITAL CARE

"Everybody wants to die with dignity. No one wants to die in the freezing ICU alone, without loved ones. But people may not be in a condition to articulate their wishes in their last days. Patients, even in the eventuality of terminal illness with no hope of recovery or irreversible coma, are often kept on life support just to delay death — perhaps under social or family pressure. These expensive treatments push many families into a huge debt trap," says Divakaran Edasseri, Director of the Institute of Palliative Care, Thrissur.

The Supreme Court ruled on March 9, 2018, that in specific conditions, a person has the right to decide against artificial life-support by writing a living will. It upheld the fundamental right to die peacefully and with dignity. The judgment was made on a PIL filed by a Delhi-based NGO. The court stipulated strict conditions. In January 2023, the court modified guidelines for its 2018 order and made it simpler. The objective of the 'group signing' was to create awareness and ease confusion about the living will. "We want to tell society that the procedure is simple and workable," said N. N. Gokul Das, a retired zoology professor, Sreekrishna College, Guruvayur.

Dying with dignity

People are generally scared of discussing their "inevitable" death. However, unofficial gatherings like Death Café, where people meet and discuss death over a cup of tea and a piece of cake, have become common in cities in the country. "We conducted Death Café sessions in the Thrissur Pain and Palliative Care Society. It was an enriching experience," said Dr. Divakaran.

And what was the age profile of those who signed the will? Though most participants were over 50, young people did also sign up.

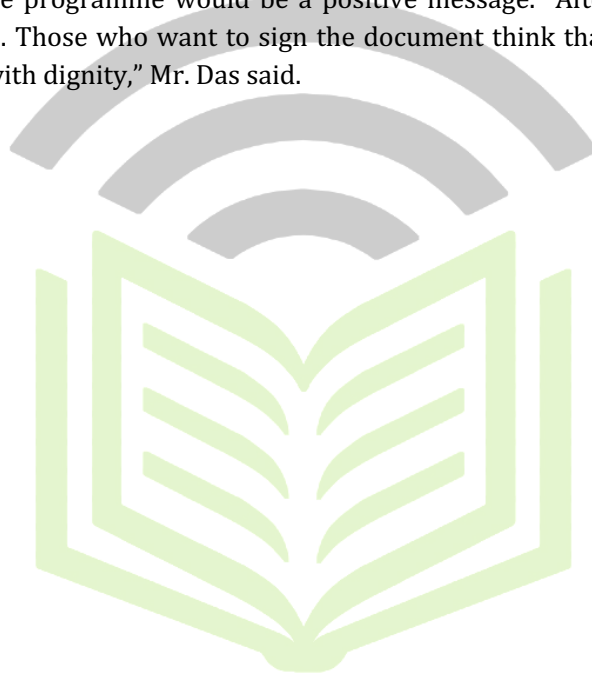


The modified guidelines

According to the modified guidelines, to make a living will, one must be of legal age and sound mind. The person must be aware of the conditions in which curative treatments and life support systems will be halted. The decision to prepare a living will must be taken without any compulsion.

The signing of the will must be witnessed by two people and should be attested by a gazetted officer or a notary. A copy must be handed over to the doctor and an assigned person (a close relative or friend). Copies of the living will should also be sent to the secretary of the local self-government and the district magistrate.

P.V. Ajayan, ENT Professor, Government Medical College, Thrissur, who organised the living will event, hoped that the programme would be a positive message. "After we signed, at least 60 people contacted us. Those who want to sign the document think that dying with dignity is as important as living with dignity," Mr. Das said.



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