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INTERNATIONAL

EXPRESS VIEW ON TRUMP INDICTMENT: A TRIAL IN AMERICA

The world's oldest democracy is in uncharted waters. A former US president and the frontrunner for the Republican Party nomination in the next election is facing criminal charges on multiple counts. The most significant of these are the four alleged felonies that occurred between Election Day 2020 and the January 6 Capitol riots in Washington two months later. Is this, at last, the beginning of justice being served, as the former president's detractors are bound to argue? Or is it the "deep state" and a Democratic Party-led executive using the courts to clip the wings of their most formidable rival, as the MAGA crowd contends? As another election year approaches, the US justice system is caught in a political quagmire. And, given how adept Trump has been in playing victim to great political effect, the legal proceedings may end up shoring up his base.

Unlike the Stormy Daniels "hush money" case in New York or even, to a lesser extent, the federal indictment for taking secret documents out of the White House, the January 6 matter strikes at the heart of democracy. The House Select Committee on the Capitol attack and the indictment accuse Trump of trying to overturn the election by putting pressure on the then Vice-President Mike Pence to ensure that the legislature does not ratify the election.

Trump is also accused of voter suppression. In essence, the prosecution is making a case that he tried to subvert the peaceful transition of power. To be fair, Special Counsel Jack Smith has been cautious, even conservative in his approach. He has not, for example, charged Trump with outright insurrection, which the Committee had recommended. The White House, too, has maintained a studied distance from the case. Yet, in an era of deepening polarisation, there may be little impact of these nods to propriety.

The fact remains that Trumpism has significantly, if not fundamentally, altered the US polity. The challenge he represents is not merely a sum of his alleged crimes. It is this: How does a liberal, centrist politics face up to demagoguery? Is there a form of political communication that can combine and package empathy, complexity and the importance of institutions, in opposition to "us vs them" binaries, lies and exhortations to return to "the good old days"? Trump's legal troubles may or may not affect his electoral standing. But the answer to what he has unleashed in US society must be political. How the US system deals with this will be watched across the world — as an example to emulate or a warning.

WHY DID META BLOCK CANADA'S ACCESS TO NEWS REPORTS?

The story so far:

On August 1, Meta announced that it will block users in Canada from posting and accessing news reports on its Facebook and Instagram platforms. This is after Canada's Online News Act came into effect on July 22, stipulating that large digital players such as Meta and Google should pay news publishers for content that is made available on their platforms. Meta's spokesperson said the law was "based on a fundamentally flawed premise," and, "the only way we can reasonably comply is to end news availability in Canada." Google has added that it "will have to remove links to Canadian news from our Search" in Canada.

What is the Online News Act?

In the words of the Canadian government itself, the legislation "requires the digital platforms that make news available and have a strategic market dominance bargain fairly, and in good faith, with Canadian news businesses for the use of their news content on their services." Essentially, Google and Meta will have to, under government oversight, enter into compensation agreements with authorised news publishers in Canada.

The law states that there will be a minimum contribution that the platforms need to make, based on their revenue in Canada.

The bargaining process will be overseen by the Canadian Radio-television and Telecommunications Commission, a government body. The law also has language which seems to say the government can restrict how digital platforms treat news items or topics, such as algorithmically promoting or downplaying them.

In 2021, Australia passed the News Media and Digital Platforms Mandatory Bargaining Code, which became the blueprint for Canadian law and similar laws are being considered in Europe and many other countries.

This legislative activity is a reaction to the "asymmetric interdependence" that has developed between a few large digital platforms and news publishers. The news publishers heavily rely on these platforms to send readers to their content, and as a result, generate revenue.

However, for digital behemoths such as Meta and Google, news in its regulated form does not form a big or monetarily valuable chunk of content -- giving them the upper hand at any negotiation table.

Why such an Act?

In the last decade, advanced economies saw a decline in revenue for printed publications as readers and advertisers moved online. Many newspapers, especially smaller ones with local importance, closed down in Europe and North America. Google and Meta now dominate online ad revenue and content distribution, leading to concerns about the disproportionate revenue share with the news publishers. Australia and Canada have laws to negotiate and set fair terms, but critics claim that it mainly benefits large media organisations. India is also pursuing similar legislation. These efforts are part of the global "techlash" aiming to curb the powers of big tech companies in various spheres.

How have the platforms responded?

In February 2021, Facebook blocked users in Australia from posting links to news for a few days in response to the impending mandatory bargaining code. However, it restored access after talks with the government.

Since then, both Facebook and Google have struck deals with many Australian publishers on revenue sharing. In some estimates, the law has established an annual flow of 200 million Australian dollars from digital platforms to publishers.

Despite this precedent, Facebook has taken a strong stance on Canadian law and shows no signs of budging. Both Google and Facebook argue that they are net benefactors for publishers, sending traffic and revenue to the sites.

The pressing concern now is that if Facebook continues to ban journalistic content from authoritative news publishers, and Google also starts blocking content, the Canadian reader will be left with only questionable sources on these widely used platforms.

EXPLAINED: WHY IS AN AMAZON TRIBE TALKING TO INDIANS ABOUT BLOOD GOLD?

From the remote rainforests of Brazil, a little-known tribe has made an emotional appeal to Indians: "The gold which has come from our Yanomami territory is Blood Gold, gold at the cost of indigenous blood. I'd like to send a message to the people of India, to the Indian government and the companies which import it: You must stop buying Blood Gold. Buying Blood Gold is not good. It's important that the government thinks again, that the Indian people think again and do not buy Yanomami Blood Gold."

The appeal, by Dario Kopenawa of Brazil's indigenous Yanomami people, was posted in a video online with English subtitles by Survival International, an international human rights advocacy based in London, which campaigns for the rights of indigenous and tribal peoples around the world.

The Yanomami people

The Yanomami live in the rainforests and mountains of northern Brazil and southern Venezuela, and are, according to Survival International, the largest relatively isolated tribe in South America.

The Yanomami are believed to have crossed the Bering Strait from Asia into North America perhaps 15,000 years ago, and travelled southward to their home in the Amazon. Survival International says the tribe numbers around 38,000 today, and its members live in contiguous forested territory of around 9.6 million hectares in Brazil and 8.2 million hectares in Venezuela.

The Yanomami practise an ancient communal way of life. They live in large, circular houses called yanos or shabonos, some of which can hold up to 400 people.

Rituals, feasts and games are held in the main, central area. Each family has its own hearth where food is prepared and cooked during the day. At night, hammocks are slung near the fire which is stoked all night to keep people warm.

It is a Yanomami custom that a hunter does not eat the meat he has killed. "He shares it out among friends and family. In return, he will be given meat by another hunter," says the website of Survival International.

The Yanomami consider all people to be equal, and do not have a chief. Instead, all decisions are based on consensus after long discussions and debates.

Gold rush in Yanomami country

Since the 1980s, the Yanomami have been facing an onslaught from illegal gold miners. According to Survival International, Yanomami land was invaded by up to 40,000 miners who killed the indigenous people, destroyed their villages, and brought them deadly diseases. A fifth of the Yanomami population perished in just seven years.

Following a sustained campaign led by Survival International, the Brazilian government notified a 'Yanomami Park' in 1992, and the miners were expelled. However, they kept returning, and in 1993, they murdered 16 Yanomami including a baby in Haximú village. A Brazilian court

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subsequently found five miners guilty of the massacre. However, the illegal entry of gold miners in Yanomami country continued.

Fiona Watson, Research and Advocacy Director at Survival International, told The Indian Express, "The situation is getting more desperate as the number of illegal gold miners has increased dramatically in the last few years and the authorities have done little to tackle the problem. The Yanomami are facing a social and environmental catastrophe in terms of their health and the forest and rivers they rely on.

"Two scientific studies by Fiocruz (one of Brazil's leading research institutes) have shown that some Yanomami communities near the illegal mining zones are facing dangerously high levels of mercury contamination (significantly over the WHO safety limit)."

Why the appeal to Indians?

Watson says gold mined illegally in Yanomami land has most likely been coming to India since at least 2018 – "but it could be earlier than this as it has been traded on the black market for years".

In June 2019, BBC Brasil reported that the state of Roraima, in which many Yanomami live, had exported 194 kg of gold to India since September 2018, quoting figures from Comex Stat, the Brazilian Ministry of Economy portal on foreign trade. Roraima, the report said, has no legal gold mines, but is the state where most of the illegal gold is mined.

A report on the Yanomami published in The New Yorker magazine in November 2019 ('Blood gold in the Brazilian rainforest') said a third of the gold produced in Brazil is sold as jewellery in India and China, and that it was difficult for buyers to distinguish between legal and illegal gold. The BBC Brasil report said India was "the fourth largest importer of Brazilian gold in the world".

What now for Yanomami

The tribe has launched an initiative called MinersOutCovidOut to enlist the support of Brazilian society and the international community to lobby the Brazilian government to take urgent action to remove the miners and to prevent the spread of the coronavirus.

"One of the transmission routes of the virus in the territory is through the miners who enter and leave the Yanomami territory with impunity. The NGO ISA wrote a report warning that Covid-19 is likely to be transmitted by the miners and in the worst case scenario 40 per cent of Yanomami living in the mining zones could be infected and hundreds could die from the virus," Watson said.

CARTEL POLITICS

The assassination of a presidential candidate in Ecuador, just 11 days ahead of voting, shows that even its top politicians are not safe from organised gangs that have, in recent years, turned this South American nation into a hub of narco-trafficking. Fernando Villavicencio, a former journalist and lawmaker, was one of the most outspoken critics of what he called "narco-politics". During the election campaign, he had promised measures to tackle gang violence such as building a maximum-security prison in the Amazon for gang leaders, enhancing anti-drug cooperation with the U.S., cracking down on cocaine exports from Ecuador and rooting out corruption in the government, police and judiciary. He rose to fame during the presidency of leftist leader Rafael Correa. In 2014, when Mr. Correa, now in exile, was the President, Villavicencio had to flee fearing a government crackdown; he briefly sought asylum in Peru. He returned after Mr. Correa's

presidency ended and was elected to the National Assembly where he made a name for himself as an enemy of drug cartels. It is this relentless fight against organised crime that seemed to have cost him his life. Officials say criminal gangs are behind his murder, and police have arrested six Colombian nationals who they say have ties with a drug trafficking cartel.

Ecuador, a relatively peaceful country of 18 million people until 2017-18, is now one of the most dangerous countries in Latin America. Situated between Colombia and Peru, both major producers of cocaine, it has seen a spurt in violent crimes with drug cartels shifting their focus to the country in order to get drugs shipped to North America and Europe. Murders have quadrupled since 2019, with 4,800 recorded last year. Officials say two international crime organisations, a Mexican cartel and a Balkan one (known as the Albanian mafia), have recruited local gangs to build drug networks, and their fight to take control of the supply routes has led to rising gang violence. The gangs have turned prisons into operating bases and ports into fighting zones, while extortion networks flourish across the country. The government of President Guillermo Lasso, a conservative who is facing serious allegations of corruption, has remained largely helpless when cartels built a parallel system. It is this impunity that led to the assassination of Villavicencio. If Ecuador's politicians and state institutions continue to let criminal gangs have their way, it is only a matter of time before the country becomes a failed state. Investigators have to find out how and why Villavicencio's security broke down, and bring the perpetrators to justice. But a bigger message of the murder is that Ecuador should start an uncompromising war against organised crimes. Other countries in the Americas should offer a helping hand to Quito in this battle.

CHASING CONSENSUS

The Jeddah conference on the Ukraine war, in which 42 nations participated, was one of the most serious efforts by the world in finding a way to end the conflict. This was not a typical peace conference. Russia was not invited, and the main goal of Ukraine and its western partners was to build consensus among major powers, especially in the Global South, on working towards a fair and durable peace. After the talks, diplomats said there was broad acceptance about respecting the central pillars of international law such as Ukraine's sovereignty and territorial integrity, and that there was agreement to meet again. China had stayed away from the Copenhagen conference in June, which was a precursor to the Jeddah talks. But with China's participation this time, along with India and South Africa — all countries that maintain good ties with Russia despite the war — global efforts towards peace have gained much more seriousness. China, in February, had issued a position paper on the war calling for a "political settlement", where it said the "sovereignty, independence and territorial integrity of all countries must be effectively upheld", while also backing Russia's security concerns. Western countries had slammed China's position, saying it could never be a neutral backer. But today, concerned parties appear to be more pragmatic and want China and India to play a bigger, constructive role in convincing Russia to take the path of talks.

Eighteen months after the war began, it is now evident that it has no military solution. Russia has made some advances since last year's humiliating retreat from Kherson and Kharkiv, but is still far from meeting its objectives, and is struggling to cope with the war's effects — from political and economic stability to security issues. Ukraine's much-awaited counteroffensive which started with advanced western weapons and training, has not achieved any major breakthrough. While Ukraine has shown its capability to strike deep inside Russia with drones, Moscow keeps bombing Ukrainian cities and ports. But the stalemate does not push either side towards talks. According to Ukrainian President Volodymyr Zelenskyy's peace plan, Russia has to withdraw from all

occupied territories for talks to begin. Moscow demands recognition of the annexed Ukrainian territories, including regions its military does not control. Amid these maximalist positions, there is hardly any room for direct talks. This is where the international community could make a difference. It should work with Russia and Ukraine to build an agenda for future talks. The coming together of Ukraine's western backers, neutral developing powers and Russia's close partners could be the first step in building this consensus.

ON A MISSION TO RESHAPE ISRAEL

Israelis are out on the streets over Prime Minister Benjamin Netanyahu's judicial overhaul plans. Since returning as Prime Minister, Mr. Neyanyahu has shown a willingness to go to any length to pass these laws that will, in effect, remove the only check on executive power.

The judicial overhaul was not demanded by any segment of the electorate. Yet, in a pattern that has been documented in democracies around the world, it is a think tank — in this case, the Kohelet Policy Forum — that has been working behind the scenes to push for, and literally draft, the Bills aimed at clipping the wings of the Israeli judiciary.

Founded in 2012 by Moshe Koppel, an Israeli-American computer scientist who shifted from New York to the West Bank, Kohelet's stated objective is to "secure Israel's future as the nation-state of the Jewish people" and "to broaden individual liberty and free market principles in Israel". Known for keeping a low profile, both Kohelet and Mr. Koppel hit the limelight earlier this year when Israeli protesters converged at its Jerusalem office, blocking its entrance with sandbags and barbed wire. It has since become common knowledge that Kohelet is the brain behind the judicial overhaul legislation.

Naturally, once its role in national law-making became clear, the spotlight shifted to its donors. It has emerged that Kohelet is a part of an influential network of right-wing think tanks and lobbying groups funded by libertarian Jewish American billionaires. It draws inspiration from, and is part of, a set of neoconservative hubs that includes the likes of Cato Institute, American Enterprise Institute, and the Heritage Foundation, to name a few. Two of its biggest donors are Arthur Dantchik, 65, the billionaire co-founder of Susquehanna International Group, a privately held financial services firm, and Jeff Yass, 67, Mr. Dantchik's partner at Susquehanna. Mr. Yass, whose net worth is $28.5 billion, is the 48th richest man in the world and a high profile Republican contributor.

Just as the Heritage Foundation was instrumental in introducing 'Reaganomics' into American public policy and turning it into economic 'common sense', Kohelet has been trying to perform a similar role in Israel. A senior member of Mr. Netanyahu's Likud Party has said the judicial Bills that have plunged Israel into crisis were not even discussed internally in the party before being tabled in Parliament. And the recently passed Bill that scuttled the Supreme Court's power to review government decisions on the grounds of 'reasonableness', was by no means the first to be drafted by Kohelet before being muscled through the Knesset.

State of Jewish people

Kohelet was also the key driver behind the Nation-State law passed in 2018, which, for the first time, specifies Israel to be a nation-state of the 'Jewish people' where Jews alone have the right to self-determination. This law also downgraded the co-official language status of Arabic. At the same time, Kohelet's international wing was instrumental in dredging up justifications that made it

easier for Donald Trump to change long-standing U.S. policy and assert that Israeli settlements in the West Bank did not violate international law.

In other words, Kohelet, apart from being a conduit for channelling the ideas of the American far-right into Israel, has also been active in shifting the American policy towards Israel in a manner that it would make it difficult, if not impossible, for American lawmakers to criticise Israel even for abuses documented by independent bodies such as Amnesty and Human Rights Watch. According to democratic rights activists, Kohelet has been working with its U.S.-based allies to recast any criticism of Israel as "anti-semitic" – a tactic believed to be responsible for the removal of Congresswoman Ilhan Omar from the House Foreign Affairs Committee.

Supported generously with millions of dollars from American Jewish billionaires, with staff strength of over 120, and a pool of politicians ready to run with its programme, Kohelet is also pushing for gender segregation laws. Secular Israelites are desperately looking to rally support from liberal sections of the Jewish diaspora as Kohelet presses ahead with a mission to reshape Israeli society in the stereotypical image of the ultra-right — orthodox in culture, neo-liberal in economics, majoritarian in politics, and authoritarian in governance.

WHAT IS ECOWAS, THE WEST AFRICAN BLOC THAT COULD INTERVENE IN NIGER'S COUP?

In a July 26 coup, soldiers in the West African nation of Niger installed Gen. Abdourahmane Tchiani as head of state after ousting President Mohamed Bazoum, who said he was held "hostage". Along with the difficult economic conditions already prevailing in the country, what has added to the concern for some in the West are the Nigerien calls for assistance from Russia's Wagner Group.

A mercenary organisation that was also active in the Ukraine war and maintained a footprint in Africa, the Group has fallen out of favour with Russian President Vladimir Putin after its leader Yevgeny Prigozhin attempted a coup in Moscow in late June this year. However, its presence in Africa pre-dates its involvement in Ukraine.

Apart from the expected international players, such as Russia and the United States, the regional bloc ECOWAS or the Economic Community of West African States has been playing an active role. Its heads of state will meet on Thursday (August 10) to discuss their next steps, after Niger's military junta defied their August 6 deadline to reinstate the country's ousted president and the soldiers closed the country's airspace. There is also apprehension that ECOWAS may choose to intervene militarily.

What is ECOWAS?

Also known as CEDEAO in French, the regional group was established in 1975 through the Lagos Treaty – with a mandate of promoting economic integration among its members. Today, ECOWAS has 15 members: Benin, Burkina Faso, Cape Verde, Cote d' Ivoire, The Gambia, Ghana, Guinea, Guinea Bissau, Liberia, Mali, Niger, Nigeria, Sierra Leone, Senegal and Togo. Around 400 million people live in this region.

ECOWAS' larger aims are to have a single common currency and create a single, large trading bloc in areas of industry, transport, telecommunications, energy, financial issues, and social and cultural matters. According to its website, the vision of ECOWAS is the creation of a "borderless region" that is well-integrated. "ECOWAS is meant to be a region governed in accordance with the principles of democracy, rule of law and good governance," it states.

At the helm of its organisation structure is the Chairman of the Authority of Heads of State and Government. The Chairman is the current Head of State and Government and is appointed by other Heads of State and Government to oversee its affairs for one year.

What kind of a role has ECOWAS played in the region so far?

Beyond the goals of economic cooperation, ECOWAS has attempted to quell military conflicts in the region. According to Associated Press, ECOWAS also operated a regional peacekeeping operation known as ECOMOG, led by Nigeria in the 1990s and early 2000s, like in Liberia when forces were first deployed in 1990 during the deadly civil war and in Sierra Leone in 1997 when a democratically elected government was overthrown.

In 2017, it intervened in The Gambia after longtime President Yahya Jammeh refused to step down after losing the elections which eventually led to the winner Adama Burrow coming to power. It has sent its troops to other countries but never to Niger.

Incidentally, the ongoing Niger coup's leader, Gen. Tchiani, has previously served as battalion commander for ECOWAS peacekeepers in Ivory Coast after a ceasefire between government and rebel forces in 2003, according to a Reuters report.

And what might ECOWAS do in Niger?

While its response so far has indicated a military intervention, even if it ends up being limited in scope, the grouping faces many challenges.

For instance, on Monday, Mali said it and Burkina Faso, both neighbours of Niger run by military juntas, were sending a delegation of officials to Niger to show support and would consider an attack as an attack on them as well.

The coups in these countries have been justified by the respective military leaders by pointing to the rising influence of terrorist forces and accompanying security challenges, which they claim the civilian establishment had been unable to handle. They have also been critical of the Western role in leading efforts to solve such issues but failing.

Omar Alieu Touray, President of the Economic Community of West African States Commission, briefed the UN Security Council in July this year that from January 1 to June 30, 2023, the region recorded 1,814 incidents of terrorist attacks, which resulted in 4,593 fatalities. By the end of April 2023, half a million refugees were recorded in the region.

There is also the question of whether longstanding measures of economic sanctions – such as those imposed by ECOWAS – can work, as these countries are also dealing with low economic growth prospects at the moment. France, a former coloniser of Niger, has cut off aid following the coup. Additionally, the presence of more than 2,000 troops from France and the US has also irked some locals, with the coup seeing anti-France graffiti and slogans.

There are also internal difficulties in launching an attack. As a Foreign Policy article notes, the neighbouring country of Nigeria has its President Bola Ahmed Tinubu currently as the bloc's chair and he has led the call for ECOWAS to intervene militarily. However, the Nigerian Senate has pushed back on approving Tinubu's request for military deployment.

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WHAT ARE CHINA'S 'SPONGE CITIES' AND WHY AREN'T THEY STOPPING THE FLOODS?

China has been hit by devastating floods in recent weeks, inundating cities and causing deaths and infrastructural damage, as well as raising questions about the effectiveness of its 2015 "sponge city" initiative aimed at reducing urban flood risks.

The initiative was launched to boost flood resilience in major cities and make better use of rainwater through architectural, engineering and infrastructural tweaks.

But cities remain vulnerable to heavy rain. In July alone, floods and related geological disasters caused 142 deaths and disappearances, destroyed 2,300 homes and caused direct economic losses of 15.78 billion yuan ($2.19 billion), China's emergency ministry said on Monday. Following is an explainer about the sponge city scheme.

WHY WAS THE INITIATIVE LAUNCHED?

China has long sought to improve the way it handles extreme weather, and make highly populated cities less vulnerable to flooding and drought. The "sponge city" initiative was designed to make greater use of lower-impact "nature-based solutions" to better distribute water and improve drainage and storage.

Those solutions included the use of permeable asphalt, the construction of new canals and ponds and also the restoration of wetlands, which would not only ease waterlogging, but also improve the urban environment.

Breakneck urbanisation has encased vast stretches of land in impermeable concrete, often along banks of major rivers that traditionally served as flood plains. With wetlands paved over and nowhere for surplus water to settle, waterlogging and flooding was commonplace.

According to 2018 data, 641 out of 654 large- and medium-sized cities in China were vulnerable to flooding and waterlogging, with 180 facing flood risks every year.

WHAT HAS BEEN DONE SO FAR?

Studies show that many of the local pilot initiatives launched so far have had a positive effect, with low-impact projects like green roofs and rain gardens reducing run-offs.

But implementation has so far been patchy. A total of 30 pilot sponge cities were selected in 2015 and 2016. By last year, only 64 of China's 654 cities had produced legislation to implement sponge city guidelines, researchers said in January.

The researchers said the government had so far paid "minimum attention" to sponge city construction, and called for national legislation to be drawn up as soon as possible.

WHAT ARE THE LIMITATIONS OF SPONGE CITIES?

Even if sponge city measures had been implemented in full, they would have been unable to prevent this year's disasters.

Zhengzhou in Henan province was one of the most enthusiastic pioneers of sponge city construction, allocating nearly 60 billion yuan to the programme from 2016 to 2021. But it was unable to deal with its heaviest rainfall in history in 2021.

Experts believe sponge city infrastructure can only handle no more than 200 millimetres (7.9 inches) of rain per day. At the height of the rainstorms that lashed Beijing at the end of July, rainfall at one station reached 745 millimetres over three and a half days. In July 2021, Zhengzhou saw rainfall in excess of 200 mm in just one hour.

Authorities are also playing catch-up to climate change. This year's heavy rain hit cities in the normally arid north, where sponge city development is less advanced.

STIFLING DISSENT

For the second time in three months, Pakistan's former Prime Minister Imran Khan has been arrested, this time after a conviction in a case involving the misappropriation of official gifts meant for the 'Toshakhana'. He was last arrested on May 9 in the 'Al Qadir' trust case charge sheet. The latest conviction, which carries a sentence of three years, means that he is now disqualified from Parliament for the next five years, and will not be able to stand for election in polls due by November. Last week, Prime Minister Shahbaz Sharif had announced that he would dissolve Parliament on August 9, after which an interim government will step in. It is significant that Mr. Khan's arrest came days before the transition. The legal battle Mr. Khan faces now is formidable, but he is by no means the first Pakistani Prime Minister to face jail time and disqualification. During his tenure, his government had pursued cases against former Prime Ministers Nawaz Sharif and Shahid Khaqan and other major Opposition leaders including former President Asif Ali Zardari. The common factor is that all these arrests appear orchestrated not so much by political rivalry, but due to problems with the powerful military. In Mr. Khan's case, he faced months of house arrest under former Pakistan President General Pervez Musharraf, but subsequently came to good terms with the military. His stunning electoral win in 2018 was believed to have been achieved with General Qamar Bajwa's blessings. However, after they developed differences, Mr. Khan's political troubles began to mount.

The government's actions are excessive by any measure. The case Mr. Khan has been arrested for is just one amidst about 100 cases he has been charged in ever since he was ousted from office in April 2022. Apart from the litany of legal cases against him and his family, there has been a systematic attempt to prosecute leaders of his party, the Pakistan Tehreek-e Insaf. In addition, cases of terrorism, sedition and blasphemy against Mr. Khan and his colleagues indicate there could be more serious sentences to follow. At the same time, his ouster from power and the cases have not visibly challenged his popularity in Pakistan, going by the by-election results last October, and the anger after his arrest in May. In that sense, the fact that his conviction and arrest in the latest case were not accompanied by similar protests is not an achievement for Pakistan's government, but demonstrates the effectiveness of its establishment in silencing public expression. None of this augurs well for Pakistan's democracy.

NATION

PETTY BATTLES

The Opposition's stated objective of moving a no-confidence motion against Prime Minister Narendra Modi's government was to force him to speak on the ongoing ethnic violence in Manipur. Speak, he did, and he promised to work for peace and reconciliation in the strife-torn State. The edge of Mr. Modi's speech on Thursday, however, was against the Opposition that walked out before the House rejected the motion through a voice vote. During the debate, Home Minister Amit Shah offered a more detailed exposition of the government's approach towards the conflict and the situation in Manipur. The Bharatiya Janata Party (BJP) and the Centre are unambiguous in their defence of Manipur Chief Minister N. Biren Singh. Mr. Shah noted that the fresh influx of refugees in recent years from Myanmar into Manipur and Mizoram has aggravated the age-old ethnic rivalry between the Meities and the Kukis. He also underscored the heightened security measures that are being implemented to manage the foreign population and contain the ethnic conflict. He said the Chief Minister had been cooperating with the Centre, and that the situation did not call for his dismissal or the imposition of President's Rule. Mr. Shah appealed to the two warring communities, the Meiteis and the Kukis, to enter into a dialogue with each other and with the Centre. He should follow up on that appeal, and both communities should take it as a shot at peace.

If Manipur is stained by bloodshed, India's national politics is stifled by the bad blood between the government and the Opposition. The debate on the no-confidence motion lacked wisdom and wit, but had plenty of rancour and diatribe as both sides tried to score petty points. The alternative vision that the Opposition claims to represent for India ahead of the 2024 election did not shine through the debate, if that was an aim at all. The ruling BJP, meanwhile, continued to weaponise rules and norms to mute the Opposition, and railroaded legislative business. The Leader of the Congress in the Lok Sabha, Adhir Ranjan Chowdhury, has been suspended until the Privileges Committee takes a decision about his alleged unruly conduct in the House. This decision keeps the leader of the principal Opposition party away from Parliament for an indefinite period. National politics has come to resemble an irreconcilable war. Political parties should not imitate the conflict in Manipur; dissent and protest are intrinsic to a democratic polity, but empty rhetoric and stubborn indifference are not.

WHY ASSAM RIFLES PERSONNEL ARE FACING INCREASED HOSTILITY IN MANIPUR

Tasked with manning "buffer zones" between Meitei- and Kuki-Zomi-dominated territories in Manipur, the Assam Rifles is facing heat from the Meiteis, with some even demanding its removal from the state.

Most recently, the Assam Rifles was embroiled in a row when its vehicles blocked state police personnel from the Meitei-dominated Bishnupur district from crossing over into a Kuki-Zomi-dominated territory. Police claimed they were pursuing "suspected Kuki militants" who had killed three Meitei men that day, and actions of the Assam Rifles personnel allowed them to flee. The police also filed an FIR against the central force.

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What is happening with the Assam Rifles in Manipur?

Normally, there are 20 battalions of the Assam Rifles in Manipur, with the primary mandate of counter-insurgency and border guarding. Since ethnic violence erupted in the state on May 3, two more battalions were moved in, senior officers told The Indian Express, and their deployment was readjusted to create a "gap" between territories dominated by the two communities in conflict.

This means that the Assam Rifles and the Army have been placed in "fringe locations", where Meitei-dominated areas in the valley meet Kuki-Zomi-dominated areas in the hills, with an aim to stop troublemakers from crossing over. Officers said this is what has aggrieved members of the Meitei community, some of whom also harbour the impression that Assam Rifles favour the Kuki-Zomi.

On Monday, a protest was held across the valley by the Meitei women activists known as Meira Paibis. The protesters held placards saying 'Go back Assam Rifles' and 'Stop using Indian security forces against Meiteis'.

In fact, confrontations between the Meira Paibis and the Assam Rifles have been taking place since the end of May, with women blocking not just the movement of personnel in valley areas but also the movement of trucks carrying rations and other supplies to their camps.

What the Meiteis say

About the Bishnupur incident, RK Tharaksena, a senior member of the Meira Paibi community, made several allegations. "How did the militants cross the buffer zone in the night and kill those people? Whenever there is any attack by the Kuki people, they (Assam Rifles personnel) just stand and observe," Tharaksena claimed.

As a video of the confrontation between the Assam Rifles personnel and the policemen emerged, the Spear Corps of the Indian Army issued a statement on Tuesday night: "Some inimical elements have made desperate, repeated & failed attempts to question the role, intent and integrity of the Central Security Forces, especially Assam Rifles…It needs to be understood that due to the complex nature of the situation on the ground in Manipur, occasional differences at tactical level do occur between various security forces." The statement added that "all such misunderstandings" are "immediately addressed through the joint mechanism to synergise the efforts for restoration of peace and normalcy in Manipur."

Beyond the present conflict too, longstanding grievances have been attributed to the Assam Rifles, including alleged illegal immigration from Myanmar. "For 40 years, the sole responsibility for the Indo-Myanmar border has been with the Assam Rifles. So how are all the immigrants coming? It is all happening under their nose… Areas with large-scale poppy plantations in the hills are also under their nose," alleged Dhananjoi, a leader of Meitei civil society organisation COCOMI.

What Assam Rifles are saying

Assam Rifles officers countered these charges by saying that while the crackdown on poppy cultivation is the responsibility of the state police, the border is largely unfenced, with a Free Movement Regime in place. They said when illegal immigrants are found, the state and the Ministry of Home Affairs are informed, so their biometrics can be recorded. "But to address the issue more seriously, fencing of the border would be required," said an officer.

Historically, the paramilitary force has had a strained relationship with the valley's residents, particularly during the long years of counter-insurgency operations when the Armed Forces Special Powers Act (AFSPA) was in force. One of the most prominent acts of resistance in Manipur was when 12 Meitei women protested naked in front of the Assam Rifles Headquarters in Imphal in 2004 against the killing of a 32-year-old woman, Thangjam Manorama Devi.

ROW OVER SELECT COMMITTEE FOR DELHI SERVICES BILL: WHAT IS THIS BODY, DID RAGHAV CHADHA FLOUT RULES?

After at least four MPs complained that their names had been included in a proposed Select Committee for the Delhi Services Bill without their consent, Rajya Sabha Deputy Chairman Harivansh on Monday announced a probe.

The Select Committee was proposed by Aam Aadmi Party (AAP) MP Raghav Chadha in the Upper House. After the deputy chairman read out the names to be included in the proposed committee, Home Minister Amit Shah said members had complained their names were included without their signatures in the proposal moved by the AAP leader.

Terming it a breach of privilege of the House, he said the matter should be referred to the Privileges Committee. "Who signed on their behalf is a subject of investigation," he said, and requested the Chair to record the statements of the complainant members.

A day later, AAP leader Sanjay Singh protested the Home minister's statements, accusing him of spreading rumours. "Don't you know that no one's signature is required to propose the name in the Select Committee? Do not spread lies and rumours, Home Minister," Singh said.

Five MPs of the Rajya Sabha — S Phangnon Konyak, Narhari Amin and Sudhanshu Trivedi of BJP, M Thambidurai of AIADMK and Sasmit Patra of BJD — had said their name was included in the proposal without their consent.
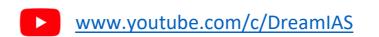
What is a Select Committee?

India's Parliament has several types of committees which discharge different functions. There are 12 Standing Committees that are permanent in nature, with their members nominated from time to time by the Chairman. The Privileges Committee, which Shah wanted the Raghav Chadha matter referred to, is one such.

Then there are ad hoc or temporary committees, which are set up for a specific purpose, such as examining a particular Bill, and are dissolved once that purpose has been served. A Select Committee belongs to this category. However, while it is temporary in nature, the procedure it is to follow is laid down in the Rules of Procedure.

Under Rule 125 of the Rajya Sabha Rules and Procedures, any member may move an amendment that a Bill be referred to a Select Committee.

According to the Rajya Sabha rules, "The Select/Joint Committees on Bills are constituted by the House(s) on specific motion moved by the Minister in-charge of the Bill or any member and adopted by the House to consider and report on Bills as referred to them from time to time." A Joint Committee has members from both Lok Sabha and Rajya Sabha.

The motion to refer a Bill to a Select Committee can either be moved by the member in-charge of the Bill, or by any other MP, as happened in the case of the Delhi Services Bill, where the motion was moved by Chadha.

How are a Select Committee's members selected?

According to the Rajya Sabha rules, "On a motion moved in and adopted by the House, Bills are from time to time referred to Select Committees, the members on which are specifically named in the motion… The members of the Select Committee on a Bill are appointed by the House when the motion that the Bill be referred to a Select Committee is made… No member is appointed to a Select Committee if he is not willing to serve on the Committee. The mover has to ascertain whether the member proposed by him is willing to serve on the Committee."

Thus, while the rules do say that a proposed member's consent has to be taken before he can serve on a Select Committee, they do not specifically mention collecting signatures of those whose names have been proposed.

The actual number of membership of the Select Committee is not fixed; it varies from Committee to Committee. If it is a Joint Committee, the proportion of members from the Rajya Sabha and the Lok Sabha is 1:2. The Chairman of the Committee is appointed by the Chairman of the Rajya Sabha from among the members of the Committee.

The member or Minister in-charge of the Bill is generally included as a member of the Committee.

How does a Select Committee work?

The quorum for each sitting needs to be one-third of the total number of members of the committee. In case of equality of votes on any matter, the chairman (or any other person presiding) will have a second or casting vote. A select committee may appoint a sub-committee to examine any special points connected with the Bill. The report will be signed on behalf of the committee by the chairman. Any member can record dissent. The report, along with notes of dissent, will be presented to the Rajya Sabha, printed and circulated among all members.

And what exactly does a Select Committee do?

The Committee's job is to go through the text of the Bill, clause by clause, in order to see that the Bill "reflects clearly the intention behind the measure and the object proposed to be achieved is adequately brought out," Rajya Sabha rules say.

"The Committee may, for this purpose, invite memoranda from or take oral evidence of experts or interested persons and organisations. The Committee may also ask the Government officials to explain the policy behind the various provisions of the Bill and to supply to it such information and background material as may be required by it. After hearing the evidence, the Committee considers the various provisions of the Bill and formulates its conclusions and may amend the clauses, etc. of the Bill to bring about the intention clearly.

The Committee may also visit organisations and institutions, etc. for on-the-spot study of a matter connected with the Bill."

What happens once a Select Committee's report is submitted?

The report of the committee is of a recommendatory nature. The government can choose to accept or reject its recommendations. A Select Committee can also include its version of the Bill. If they do so, the minister in charge of that particular Bill can move for the committee's version of the Bill to be discussed and passed in the House.

EXPRESS VIEW: MP GOGOI V JUSTICE GOGOI

Nearly three and half years after he was nominated by the government to Rajya Sabha, Ranjan Gogoi made his maiden speech. It came during a crucial debate, worthy of intervention by a former Chief Justice of India. The National Capital Territory of Delhi (Amendment) Bill, 2023 raises a range of constitutional issues, from the federal compact to Parliament's power to undo judgements of the Supreme Court.

While the Opposition argued, rightly, that the law undermines the power and disturbs the line of accountability, of an elected government, the Centre defended its prerogative. As an independent member, unburdened by party views, Gogoi's intervention could have been a guiding voice of reason and constitutional wisdom. It is disappointing that he, instead, chose to take a partisan cue — by attacking the Basic Structure Doctrine.

"Does it violate the basic features of the Constitution?…There is a book by (Tehmtan) Andhyarujina, the former Solicitor General of India on the Kesavananda Bharati (1973) case. Having read the book… my view is that the doctrine of the basic structure of the Constitution has a debatable, a very debatable jurisprudential basis," he said.

It is not that an independent member, even if nominated, cannot share the views of the government on an issue. But it is disconcerting — and it should certainly be seen as such by a former chief justice of the apex court — that the Centre's argument rests on attacking the relevance and legitimacy of the Basic Structure doctrine.

The debate around it has been politically fraught recently, with Vice-President Jagdeep Dhankhar and former law minister Kiren Rijiju repeatedly raising questions. Gogoi's comment was in response to the Opposition's contention that the amendment violated the federal principle, which is part of the basic structure of the Constitution that even Parliament cannot change. Surely, as a former CJI, Gogoi knows well the sanctity of the 50-year old doctrine, which is not restrictive, does not tie the hands of governments as times change, but which upholds the scaffolding of the constitutional system and protects it against attempts to hurt its inviolable core.

As a judge of the Supreme Court, the institution tasked with custodianship of the constitional letter and spirit, Gogoi applied the very same doctrine in at least three crucial cases.

Outside the courtroom too, for instance while delivering the Third Ramnath Goenka Memorial Lecture on July 12, 2018, as CJI designate, he cited the SC's development of the Basic Structure doctrine as an example of "very sound jurisprudence which we continue to reap from." It is the same doctrine that his colleague and current Chief Justice of India D Y Chandrachud called "the north star," providing invaluable guidance for the interpretation of the Constitution. Gogoi's volte-face does not reflect well on the institution he served for over 30 years.

In interviews after his Rajya Sabha nomination in 2020, he had said his presence in the House would provide an opportunity to project the views of the judiciary before the legislature and vice-versa. He would do well to pause and dial back to his own words. Gogoi, the MP, should not need to abandon Gogoi, the judge.

RAHUL GANDHI'S MP STATUS RESTORED: WHAT THIS MEANS, WHAT NEXT

Two days after the Supreme Court stayed his conviction in a criminal defamation case, the Lok Sabha Secretariat Monday cleared Congress leader Rahul Gandhi's return to Parliament. With his status as Wayanad MP formally restored, here's what changes for Rahul.

What are the perks that will be restored for Rahul?

As an MP, Rahul is entitled to receive a salary of ₹1 lakh per month during his term in office. When Parliament is in session, an MP is entitled to an additional Rs 2,000 for each day.

MPs are also entitled to a travel allowance, which includes fee transit by railways. Other perks include medical facilities for the MP and family members, housing, telephone, water, and electricity.

The Salaries and Allowences of Members of Parliament Act, 1954 prescribes the range of benefits that an MP is entitled to.

As per the Housing and Telephone Facilities (Members of Parliament) Rules, 1956: "Each Member shall be entitled without payment of a licence fee] to housing accommodation in the form of a flat throughout his term of office: Provided that where a member is allotted housing accommodation in the form of bungalow at his request, he shall pay full normal licence fee if he is entitled to such accommodation]." Before his disqualification, Rahul was designated an official residence at 12 Tughlak Lane in Delhi.

What happens next in the case?

On August 5, the Supreme Court stayed Rahul's conviction and sentence awarded by Chief Judicial Magistrate HH Verma in Surat on March 23, 2023.

Before this, Rahul had moved the Sessions Court seeking a stay of the conviction. Under 389 of the Code of Criminal Procedure, an Appellate Court can suspend the sentence of a convicted person who is sentenced to imprisonment of not more than three years. The Sessions Court rejected the plea, prompting Rahul to move the HC, which also rejected the plea.

The SC's stay essentially means that Rahul's conviction will be kept in abeyance — as though it did not exist. However, this is only till the Appellate Court decides the case.

An appeal against the conviction is pending before the Surat Sessions Court.

INDIA'S MINING POLICY SHIFT

The story so far:

On August 2, Parliament passed the Mines and Minerals (Development and Regulation) Amendment Bill, 2023, in a bid to attract private sector investment in the exploration of critical and deep-seated minerals in the country. The Bill puts six minerals, including lithium — used in electric vehicle batteries and other energy storage solutions — into a list of "critical and strategic" minerals. The exploration and mining of these six minerals, previously classified as atomic minerals, were restricted to government-owned entities.

How much of India's critical minerals are imported?

A variety of minerals, besides those used in creating fuel, are crucial to a country's manufacturing, infrastructure, and advancement.

Moreover, the clean energy transitions of countries including India, seeking to meet their net-zero emission goals, are contingent on the availability of critical minerals such as lithium, which has also been called 'white gold', and others including cobalt, graphite, and rare earth elements (REEs). These are also crucial for the manufacture of semiconductors used in smart electronics; defence and aerospace equipment; telecommunication technologies and so on.

The lack of availability of such minerals or the concentration of their extraction or processing in a few geographical locations leads to import dependency, supply chain vulnerabilities, and even disruption of their supplies. For instance, China has majority ownership of cobalt mines in the Democratic Republic of Congo, where 70% of the world's cobalt is mined. China also has by far the largest amount of reserves of REEs of any country in the world, followed by Vietnam, Brazil and Russia.

Major economies including the U.S., U.K., and the European Union in the recent past have moved to secure supply-chain resilience for such minerals and to reduce reliance for their availability on countries like China.

The Ministry of Mines, in June this year, came out with a list of 30 minerals critical to the country's economic development and national security. However, India is highly dependent on imports for a majority of minerals on this list. For instance, as per figures quoted by the Ministry, India is 100% import-dependent on countries including China, Russia, Australia, South Africa, and the U.S. for the supply of critical minerals like lithium, cobalt, nickel, niobium, beryllium, and tantalum.

Also for deep-seated minerals like gold, silver, copper, zinc, lead, nickel, cobalt, platinum group elements (PGEs) and diamonds, which are difficult and expensive to explore and mine as compared to surficial or bulk minerals, India depends largely on imports. For instance, in 2022-23, India imported close to 12 lakh tonnes of copper (and its concentrates) worth over ₹ 27,000 crore as per official figures.

Why is private sector vital for critical minerals exploration?

Studies by organisations such as the Atomic Minerals Directorate for Exploration and Research and the Centre for Social and Economic Progress (CSEP) note that India's unique geological and tectonic setting is conducive to hosting potential mineral resources and that its geological history is similar to the mining-rich regions of Western Australia and Eastern Africa.

The primary step to discovering mineral resources and eventually finding economically viable reserves is mineral exploration, which comes in various stages before mining. The stages of exploration are divided as per the United Nations Framework for Classification of Resources into G4 (Reconnaissance), G3 (Prospecting), G2 (General Exploration), and G1 (Detailed Exploration).

Notably, it is estimated that India has explored just 10% of its Obvious Geological Potential (OGP), less than 2% of which is mined and the country spends less than 1% of the global mineral exploration budget. Not many significant mineral discoveries have taken place in the country in the last couple of decades and a majority of exploration projects have been carried out by the government agency Geological Survey of India and other Public Sector Undertakings (PSUs) like Mineral Exploration Corporation Limited (MECL), with very little private sector participation.

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India's mining policy had kept greenfield exploration of minerals out of the purview of private-sector explorers for some years which meant they could only get licences to further prospect and mine resources that had been explored by a government entity. Companies also saw a lack of adequate incentives.

Exploration requires techniques like aerial surveys, geological mapping, and geochemical analyses and is a highly specialised, time-intensive and monetarily risky operation with less than 1% of explored projects becoming commercially viable mines.

Union Minister of Mines Pralhad Joshi pointed out that while Indian PSUs were in a relatively better position to explore surficial and bulk minerals like coal and iron ore, they had not fared well when it came to deep-seated and critical minerals owing to the high expenditure and long duration of risky projects while being under pressure to increase the supply of bulk minerals. He mentioned that the new Bill seeks to bring exploration processes in India at par with that of developed countries by getting private sector capacity into exploration, giving the example of Australia.

In Australia and multiple other jurisdictions globally, private mining firms called junior explorers, engage in risk-taking by putting their expertise and limited financials into explorations to find potential mines. Once discovered, these private companies can sell these to bigger mining companies who then develop and run these mines. This helps multiply exploration projects and accelerate the pace of exploration owing to private participation.

Is India's mining policy conducive to private participation?

The Mines and Minerals (Development and Regulation) Act (MMDR Act), 1957, the primary legislation governing mining in the country has been amended several times since its enactment including recently in 2015, 2020, and 2021. A CSEP discussion from June this year notes that India recognised the need for private and foreign investment in the mining sector including mineral exploration back in 1993, amending the Act next year to allow interested parties to apply for mineral concessions through a First Come First Served (FCFS) basis. Later, private companies could also get Prospecting Licences (PL) or Mining Leases (ML), and could even apply for early-stage or greenfield exploration through Reconnaissance Permits (RPs).

In the early 2010s, as the mining industry seemed to be gathering momentum, concerns about favouritism and misuse started coming up in the allocation of 2G spectrum and natural resources like coal blocks and the Supreme Court intervened.

In 2015, the MMDR Act was amended to allow private companies to participate in government auctions for Mining Leases and Composite Licences (CLs). However, due to the Evidence of Mineral content (EMT) rule, only government-explored projects were auctioned, limiting private sector involvement. The amendment also permitted private firms to register as exploration agencies, with the National Mineral Exploration Trust (NMET) funding for G4 to G1 exploration, but private participation remained limited.

How does the Mines and Minerals Bill 2023 aim to encourage private players?

Firstly, the Bill omits at least six previously mentioned atomic minerals from a list of 12 which cannot be commercially mined. Being on the atomic minerals list, the exploration and mining of these six — lithium, beryllium, niobium, titanium, tantalum and zirconium, was previously reserved for government entities. Secondly, the Act prohibits pitting, trenching, drilling, and sub-

surface excavation as part of reconnaissance, which included mapping and surveys. The Bill allows these prohibited activities.

The Bill also proposes a new type of licence to encourage reconnaissance — level and or prospective stage exploration by the private sector.

This exploration licence (EL), for a period of five years (extendable by two years), will be granted by the State government by way of competitive bidding. In these auctions, eligible explorers would bid on their desired percentage share of the auction premium which will be paid eventually by a mining lease holder up the sale of a successfully explored mine by the State government. The lowest bid by an explorer would win the EL auction. This licence will be issued for 29 minerals specified in the Seventh Schedule of the amended Act, which would include critical, strategic, and deep-seated minerals.

It also specifies the maximum area for exploration; activities in up to 1,000 sq km will be allowed under a single exploration licence. It also states that the licencee will be allowed to retain up to 25% of the originally authorised area after the first three years after submitting a report to the State government stating reasons for retention of the area.

While most auctions are reserved for State governments in the Act, the Bill also reserves the conduct of auctions for composite licence and mining lease for specified critical and strategic minerals for the central government.

What are some of the possible issues with the Bill's proposals?

Industry experts and organisations like CSEP had pointed out certain issues and made recommendations on the proposed amendments.

The primary way of generating revenue for a private company that has an exploration licence would be a share of the premium paid by the miner, which would come only after a successfully discovered mine is auctioned and operationalised. Trends show that such a process could take years to materialise owing to government timelines for clearances or may not happen at all considering depending on the complexity of the deposit and geography.

The CSEP mentions the example of the Ghorabhurani-Sagasahi Iron Ore Mine, a greenfield captive mine, which was auctioned in 2016. Even though it was a bulk mineral, production started only in late 2021, taking close to six years to receive the necessary clearances.

The explorer would not know how much revenue they will receive as the auction premium would be known only when a mine is successfully auctioned.

Vedanta Group economist Dhiraj Nayyar, in an Economic Times piece, pointed out another issue with the auction method of allocation for exploration licences. He points out that while it's feasible to auction something that has a known value (like a spectrum or a discovered mineral deposit), it is difficult to auction something for which exploration has not begun.

Besides, in its 2012 ruling, the Supreme Court had observed that since big capital investments go into discovering natural resources through exploration and mining contracts, companies would only want to spend big amounts if they're assured of utilising any discovered resources. In the new policy, only the government can auction what an explorer has discovered and the latter would only get a share of the premium at an unknown stage. This is unlike other global jurisdictions where private explorers can sell their discoveries to miners.

CENTRE'S NEW BILL ON ELECTION COMMISSION MEMBERS' APPOINTMENTS: HOW IT PLANS TO AMEND THE PROCESS

With the view of overturning the effect of the Supreme Court verdict on the appointment of the Chief Election Commissioner (CEC) and Election Commissioners (ECs), a Bill was listed to be introduced in the Rajya Sabha on Thursday (August 10).

The Centre's Bill seeks to establish a committee of the Prime Minister, the Leader of Opposition in the Lok Sabha and a Cabinet Minister nominated by the PM for selecting members of the Election Commission of India (ECI).

What was the SC ruling?

On March 2, a five-judge bench of the Supreme Court unanimously ruled that a high-power committee consisting of the Prime Minister, Leader of Opposition in Lok Sabha, and the Chief Justice of India must pick the CEC and ECs.

The judgement by a bench led by Justice KM Joseph came in a 2015 public interest litigation, challenging the constitutional validity of the practice of the Centre-appointed members of the Election Commission. In 2018, a two-judge bench of the SC referred the case to a larger bench since it required a close examination of Article 324 of the Constitution, which deals with the role of a Chief Election Commissioner.

Article 324(2) reads: "The Election Commission shall consist of the Chief Election Commissioner and such number of other Election Commissioners, if any, as the President may from time-to-time fix and the appointment of the Chief Election Commissioner and other Election Commissioners shall, subject to the provisions of any law made in that behalf by Parliament, be made by the President."

However, since there was no law made by Parliament as prescribed by the Constitution, the Court stepped in to fill the "constitutional vacuum."

The Court went through the debates of the Constituent Assembly to conclude that the Founding Fathers "did not intend the executive exclusively calling the shots in the matter of appointments to the Election Commission."

The Bill now seeks to address this vacuum and set up a legislative process to make appointments to the EC.

What is a new process under the Bill?

Currently, the Law Minister suggests a pool of suitable candidates to the Prime Minister for consideration. The President makes the appointment on the advice of the PM.

As per the Bill, a Search Committee headed by the Cabinet Secretary and comprising two other members, not below the rank of Secretary to the government, having knowledge and experience in matters relating to elections, shall prepare a panel of five persons who can be considered for appointment.

Then, as per the Bill, a Selection Committee consisting of the Prime Minister, the Leader of Opposition in the Lok Sabha, and a Union Cabinet Minister to be nominated by the Prime Minister will appoint the CEC and other ECs.

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Can the Parliament undo a decision of the Supreme Court?

Parliament has the power to nullify the effect of a Court ruling by addressing the concerns flagged in the judgement. The law cannot simply be contradictory to the ruling.

In this case, the arrangement prescribed by the Supreme Court was specifically because the Court noted that there was a "legislative vacuum." Filling that vacuum is well within the purview of the Parliament.

However, the idea of an independent body that conducts elections permeates through the judgement. The Court repeatedly stated that to be the objective of the framers of the Constitution.

The composition of the Selection Committee in the Bill raises questions on whether the process is now independent or still rigged in favour of the Executive. With the PM and a Cabinet Minster nominated by the PM in the three-member panel, the LoP is outvoted even before the process begins.

T.N. CHIEF MINISTER DEPLORES BJP'S 'LINGUISTIC IMPERIALISM'

Strongly reacting to Union Home Minister Amit Shah introducing three Bills with Hindi names in the Lok Sabha, Tamil Nadu Chief Minister M.K. Stalin on Friday termed it "linguistic imperialism" and said the BJP and Prime Minister Narendra Modi had no moral right to even utter the word 'Tamil' henceforth.

In a statement titled, 'Recolonisation in the name of Decolonisation!', Mr. Stalin contended that the 'audacious' attempt by the BJP-led Union government to tamper with the essence of India's diversity through a sweeping overhaul Bharatiya Nyaya Sanhita, Bharatiya Nagarik Suraksha Sanhita, and Bharatiya Sakshya Bills – reeked of linguistic imperialism. "This is an affront to the very foundation of India's unity," he said.

"From the anti-Hindi agitations to safeguarding our linguistic identity, we have withstood the storm of Hindi imposition before, and we shall do it again, with unyielding determination. The fire of resistance against Hindi colonialism is ablaze once more. The BJP's audacious bid to supplant our identity with Hindi will be opposed resolutely," he said.

P. Wilson, Rajya Sabha member from DMK said he was shocked to see names of the new Bills in Hindi, adding that this is yet another form of "Hindi imposition." He said it appeared that the Home Minister has not seen Article 348 of the Constitution which says that names of Bills and Acts must be in English.

KERALA ASSEMBLY PASSES RESOLUTION TO RENAME STATE AS KERALAM: ORIGIN OF THE TWO NAMES

The Kerala Assembly Wednesday passed a resolution urging the Centre to rename the state as "Keralam" in the Constitution and all office records.

The resolution, moved by Chief Minister Pinarayi Vijayan, was passed unanimously, with the Congress-led Opposition not suggesting any changes. The resolution said, "The name of our state in Malayalam is Keralam. States were formed on the basis of language on November 1, 1956. That day is also observed as Kerala formation day. The demand for a united Kerala for all Malayalam-speaking communities has been strongly raised right from the days of the freedom struggle.

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However, the name of our state in the first Schedule of the Constitution has been written as Kerala. This Assembly is unanimously requesting the Union Government to take immediate steps under Article 3 of the Constitution to change the name of the state to Keralam."

Origin of the names

There are several theories about the origin of the name 'Kerala'. The earliest epigraphic record that mentions Kerala is emperor Asoka's Rock Edict II of 257 BC. The inscription refers to the local ruler as Keralaputra (Sanskrit for "son of Kerala"), and also "son of Chera" referring to the Chera dynasty.

About 'Keralam', scholars believe it could have originated from 'Cheram'.

Dr. Herman Gundert, a German scholar who published the first Malayalam-English dictionary, observed the word 'keram' is the Canarese (Kannada) form of cheram, and he described Keralam as Cheram — the region between Gokarnam and Kanyakumari. The origin of the term could possibly be from the root 'cher', which means to join. This meaning is clear in the compound word 'Cheralam', in which alam means region or land.

Demands for the modern state

The people speaking Malayalam had been ruled by various kings and princely states in the region. It was in the 1920s that the Aikya (unified) Kerala movement gathered momentum and a demand for a separate state for Malayalam-speaking people came up. It aimed at the integration of Malabar, Kochi and Travancore into one territory.

The Keralites who spoke the same language, shared common cultural traditions, and were unified by the same history, rituals and customs were inspired by the freedom movement to ask for unification and integration.

The state of Kerala after 1947

The merger and integration of princely states was a major step towards the formation of the state of Kerala after Independence. On 1 July, 1949, the two states of Travancore and Kochi were integrated, heralding the birth of the Travancore-Cochin State.

When it was decided to reorganise states on a linguistic basis, the State Reorganisation Commission of the Union Government recommended creation of the state of Kerala. The Commission under Syed Fazl Ali recommended the inclusion of the district of Malabar and the taluk of Kasargod to the Malayalam-speaking people's state. It also recommended the exclusion of the four Southern taluks of Travancore viz Tovala, Agastheeswaram, Kalkulam and Vilayankode together with some parts of Shenkottai (all these taluks now part of Tamil Nadu).

The state of Kerala came into being on November 1, 1956. In Malayalam, the state was referred to as Keralam, while in English it was Kerala.

What is the process to rename a state in India?

Unlike in the case of renaming cities, to change the name of a state, approval from the Centre's Ministry of Home Affairs (MHA) is required. This means that a Constitutional amendment becomes necessary to affect this change.

The proposal has to first come from the state government. The Union Ministry of Home Affairs (MHA) then takes over and gives its consent after it receives No Objection Certificates (NOCs) from several agencies such as the Ministry of Railways, Intelligence Bureau, Department of Posts, Survey of India and Registrar General of India.

If the proposal is accepted, the resolution, introduced as a Bill in the Parliament, becomes a law and the name of the state is changed thereafter.

CLAIMS OF PEACE IN J&K, AMID CONTINUING TERROR-RELATED DEATHS

A month ago, on July 10, the Centre filed an affidavit in the Supreme Court which said that since 2019, Jammu and Kashmir (J&K) has been witnessing an "unprecedented era of peace, progress and prosperity" after the dilution of Article 370. The affidavit quoted some numbers to back this claim. A table showed the number of "terrorist initiated instances" had come down, from 228 in 2018 to 125 in 2022. Neither the source of data nor the definition of "terrorist initiated instances" was mentioned in the affidavit. There was no mention of the number of civilian or militant deaths in the affidavit. Rather, data of "organised stone-throwing incidents connected with terrorism-separatist agenda", were cited. The affidavit also quoted the number of bandh/hartals in support of the claim. Last Saturday marked four years since Jammu and Kashmir's special status was revoked by the Centre. On the anniversary, former J&K Chief Minister Mehbooba Mufti recounted how she and other leaders of her party had been put under house arrest. J&K National Conference spokesperson Imran Nabi Dar said the party office had been sealed.

Moreover, in just the first week of August, three militants and three security personnel had died in terrorism-related incidents. In fact, data from South Asia Terrorism Portal (SATP), which sources fatalities data from credible news agencies and dailies, show that the number of militant deaths has remained high since the major inflection point in 2016 when Hizbul Mujahideen commander Burhan Wani was killed.

The number of militant deaths, in the post-dilution period, is nearly double that of the relatively calmer years of 2011 to 2015 and similar to the 2016-2018 levels which saw Kashmir on the boil again.

While the number of civilian deaths in terror incidents is trending downwards since the peak in 2018, 30 people still died in 2022, a number that is higher than 2012 (19 civilian deaths), 2013 (19), 2014 (28), 2015 (19) and 2016 (14). In 2021, 36 civilians died, while in 2020, 33 such fatalities were recorded. In 2021, 45 security personnel died, and 30 in 2022. In 2011 and 2012, the corresponding numbers were 31 and 1, respectively. SATP data also show that there were 51 attacks on the Central Reserve Police Force, between August 2019 and December 2022, as against 22 attacks between August 2012 and December 2015.

In fact, the number of forced Internet shutdowns in J&K, which ranged between three and five per year, between 2012 and 2015, peaked at 116 in 2020. In 2021, 79 Internet shutdowns were recorded, the second highest in the past decade. In 2022, there were 43 such shutdowns. The shutdowns were executed by the government as a response to disturbances.

Notably, post-dilution, relatively peaceful districts such as Poonch and Rajouri in the Jammu region, have also seen sharp spikes in terrorism-related deaths. The first half of 2023 has seen a dramatic shift, with these two districts recording around 50% of all such deaths, similar to the levels seen back in 2000 to 2003. The Forum for Human Rights in Jammu and Kashmir, in a recent

report, mentions the resurgence of militancy in the Jammu region. It said: "Security analysts have warned over the past two years that, after decades of relative peace, Jammu division is once again providing loci of militancy, with a rising graph of armed attacks in Poonch and Rajouri districts."

AS J&K POLICE REOPEN GANJOO CASE, FOUR PROMINENT KASHMIRI PANDIT MURDERS RECALLED

Jammu and Kashmir Police has sought help from the public to unearth "the larger conspiracy" behind the murder of Neelkanth Ganjoo, the retired judge who was shot dead by militants in Srinagar almost 34 years ago.

The killing of Ganjoo on November 4, 1989 accelerated the chain of events that led to the mass exodus of Kashmiri Pandits from the Valley in early 1990 — leaving behind wounds that are yet to be healed, widening the Hindu-Muslim chasm in J&K, and contributing to communal polarisation across India.

The Jammu Kashmir Liberation Front (JKLF), which brought AK47 rifles into Kashmir from Pakistan in 1989, began its campaign of targeted terror with the killing of a Kashmiri Pandit woman, Prabhavati of Budgam's Chadoora area, who was gunned down in Srinagar's Hari Singh High Street on March 14, 1989. Prabhavati's killers were never traced.

On August 21 of that year, National Conference leader Mohammad Yousuf Halwai was killed in broad daylight in Kalashpora in downtown Srinagar.

Having tested the waters, and encountered almost no response from the state apparatus, the killers went for more high-profile targets. The murders of BJP leader Tika Lal Taploo, Ganjoo, Doordarshan official Lassa Kaul, and philanthropist P N Bhat followed.

Tika Lal Taploo

A senior vice president of the BJP, a member of the party's national executive and its face in Kashmir, was shot dead on September 14, 1989. Taploo, an advocate who was born in Srinagar's Habba Kadal area, was reportedly on his way to the High Court when he was attacked by three masked assailants.

Taploo's son Ashutosh Taploo recalled that a fortnight before the killing, his father had received a box of toffees and a letter from Qazi Nissar, then leader of the Muslim United Front, which said that "in view of his (Taploo's) popularity among Muslims as well, he was being given a final opportunity to leave the Valley".

Taploo then took his wife Sarla and Ashutosh, then a student of engineering, to Delhi before returning to Srinagar himself. "I advised him not to go back to Kashmir, but he was adamant. He said it was an ideological battle that he had been fighting for long, and that he had survived an attack in 1986 as well. Four days after he returned to Kashmir, he was killed," Ashutosh said.

Taploo was very popular among both Hindus and Muslims. Thousands joined his funeral procession, in which BJP leaders L K Advani and Kedar Nath Sahni were present.

Neelkanth Ganjoo

Three JKLF militants killed Ganjoo in broad daylight when the retired Sessions Judge had gone to the Jammu and Kashmir Bank branch at Hari Singh High Street. In August 1968, Ganjoo had

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awarded the death penalty to JKLF founder Maqbool Bhat and another person after a two-year trial for the murder of Police Inspector Amar Chand.

The sentence was confirmed by the Jammu and Kashmir High Court and upheld by the Supreme Court in 1982. Maqbool Bhat was hanged in Delhi's Tihar Jail in February 1984, days after the JKLF made a failed attempt to have him released through the kidnapping and subsequent murder of Indian diplomat Ravindra Mhatre in the United Kingdom.

Lassa Kaul

Kaul was Director, Srinagar Doordarshan, and a resident of Srinagar's Bemina area. He was shot dead by JKLF militants in the evening of February 13, 1990, as he came out of the Doordarshan Kendra to make a phone call to his ailing parents who lived on the outskirts of Srinagar city.

Kaul had received several threats from militants for Doordarshan's "pro-India" programmes. It was suspected that the killers had information about his movements, and were waiting for him to come out of the Doordarshan building.

P N Bhat

An advocate by profession and a philanthropist and writer, Bhat was killed on December 27, 1990 after the bulk of the Kashmiri Pandit exodus had already taken place. After arguing a case in court, he left for home around 3.45 pm, his son Kishori Lal Bhat, an advocate at the High Court of Jammu and Kashmir and Ladakh recalled.

It was amavasya, a day when Kashmiri Pandits prepare mutton with rice. Bhat was headed to the market to make some purchases, and met some other Kashmiri Pandits on the way. Near his ancestral home at Khaw Bazar, Bhat was greeted by a person wearing a pheran, who proceeded to then pull out a gun and shoot him under the chin.

Three people were arrested for the murder and tried in a TADA court. However, they were acquitted for want of evidence, Kishori Lal Bhat said, adding that all three were later killed in encounters between security forces and militants in Kashmir.

EXPRESS VIEW ON THE AFTERMATH OF NUH VIOLENCE: KHATTAR GOVERNMENT HAS MUCH TO ANSWER FOR

There is a chilling undercurrent in the aftermath of the communal violence in Nuh and Gurgaon. In Rewari, Mahendragarh and Jhajjar, several panchayats have issued near-identical diktats targeting Muslims, barring their entry in villages, demanding that their shops and businesses be shut down. In Gurgaon — the so-called "Millennium City", showcased by the Haryana government for its cosmopolitanism and prosperity — medieval calls for boycotts have reportedly led to hundreds of Muslim families shuttering their shops and leaving for places from where they came, within the state and outside it. The prejudice behind these diktats is barely disguised: "People from the Muslim community indulge in roadside vends during the day and steal animals at night," a sarpanch wrote to a sub-divisional magistrate.

There have been a few roll-backs of these unconstitutional notices. But these have been sporadic and perfunctory. Haryana's Development and Panchayat Minister Devendra Singh Babli told this newspaper that such notices "are not permissible" and that "strict action" will be taken against those who have issued them. Some of the sarpanches, such as Krishna of Saharanwas village in

Rewari, have retracted the notice after objections, insisting that it was meant only to "prevent violence". But piecemeal gestures do little to assure those whose lives and livelihoods have been unforgivably disrupted. They do not dispel the fear that elected officials and the state machinery can act in partisan ways. To even begin to provide a sense of security, those occupying the highest political offices in the state must reach out to those who are feeling fearful and vulnerable — and be seen to do so too.

Earlier this week, the Punjab and Haryana High Court took suo motu cognisance of the demolitions of homes and shops by the administration in the aftermath of the Nuh violence, based on reports, including in this paper, of due process being flagrantly violated, notices not issued. The Division Bench was scathing in its observations: "… the law and order problem is being used as a ruse to bring down buildings without following the… law. The issue also arises whether the buildings belonging to a particular community are being brought down under the guise of law and order problem and an exercise of ethnic cleansing is being conducted by the State." Chief Minister Manohar Lal Khattar must address the questions the Court has raised. He must reach out to those who live and work in his state and convey to them that the law is not a weapon but an assurance of protection of their rights and freedoms. This will require the CM to do his job, and not indulge in whataboutery. Else, this state of dishevelment may end up being his government's dismal legacy.

DEMOLITIONS AS STATE-SANCTIONED COLLECTIVE PUNISHMENT

The aftermath of the recent violence in Nuh, Haryana, saw what is now a familiar pattern: immediately after the violence, the local administration, backed by the state, demolished a number of homes in localities or neighbourhoods. These were the homes and neighbourhoods, a few political officials claimed, to which the accused rioters belonged.

The demolitions in Nuh are just the latest iteration of what has come to be called "bulldozer justice". For more than a year, from Khargone in Madhya Pradesh, to Khambhat in Gujarat, to Jahangirpuri in Delhi, to Nagaon in Assam, to many others, the demolition of homes as a form of frontier justice (as a response to political violence) has become a standard feature of administration.

A fig-leaf of legitimacy that falls away

In carrying out the demolitions, the state and its officials speak with a forked tongue. The public and official justification is that the demolitions are carried out in order to remove "illegal structures" or "encroachments". Municipal laws that authorise the removal of unauthorised structures are invoked as the legal cover for such action. This is the justification the state sticks to when it is challenged in court. However, even as it does so, politicians, and at times, even officials of the administration, go on record to say that the purpose of the demolitions is to "teach a lesson" to alleged rioters.

First, it is important to note that the state's public justification fails on its own terms. Over the years, the courts have recognised that what we euphemistically refer to as "unauthorised structures" are often the dwelling places of economically marginalised and vulnerable people, who have been failed by the state in its obligation to provide shelter to all its citizens. Consequently, other than enforcing basic procedural requirements — such as adequate notice — courts have also insisted that before demolitions are carried out, the administration must conduct a survey to check whether the residents are eligible for rehabilitation schemes, and if so, complete

their rehabilitation (through a process of meaningful engagement) before any demolitions are done.

Rehabilitation, in turn, does not simply mean picking up people from one part of the town and dumping them in another, but ensuring that there is no substantial disruption to their (already) precarious lives.

The basic purpose is to ensure that the state does not simply make its own citizens homeless, and with no recourse. Doing so is a marker of an uncivilised society.

It is obvious that the instant demolitions that we see do not comply with these procedural or substantive requirements. Last year, it was found that notice in a demolition case was actually back-dated by the administration to give an appearance of complying; in the Nuh demolitions, there have been widespread allegations that the notice and the demolitions were carried out on the same day. The state's attempts to provide a fig-leaf of legitimacy to its demolitions, therefore, fall away at the slightest scrutiny.

A form of frontier justice

But at the end of the day, everyone knows that what is happening is not a dispute over municipal law, zoning regulations, and "unauthorised" structures. It is clear that what is happening is state-sanctioned collective punishment, which is predominantly targeted against specific communities. Instead of engaging the machinery of law enforcement and justice — which is what states bound by the rule of law do — the state prefers to mete out a form of frontier justice, enforcing order through violence, and itself becoming the law-breaker.

This is evident from the fact that, as pointed out above, politicians, administrators, and even on occasion the police have stated that the true purpose of demolitions is to target the homes of alleged rioters. It is evident from the timing of the demolitions, coming instantly after cases of violence. It is evident from the fact that the reality of our urban design is such that zoning regulations are dead letters: as people have repeatedly pointed out, a good part of Delhi's most affluent neighbourhoods has been built in violation of zoning regulations. Somehow, however, it is not these colonies that face the bulldozer, but the vulnerable and the marginalised. And it is evident from the fact that the demolitions have happened predominantly in Muslim neighbourhoods, in the aftermath of communal violence.

This has, admittedly, not always been the case: in Uttar Pradesh, demolitions have been carried out against the properties of various "gangsters", and in last year's Jahangirpuri violence, a Hindu man's shop was demolished for no perceivable reason. However, it has been repeatedly noticed — and Nuh is the most recent example — that when the bulldozers run, it is primarily in Muslim neighbourhoods. This pattern has now become impossible to ignore: just a few days ago, when issuing a stay order on the Nuh demolitions, the High Court of Punjab and Haryana observed that what was going on had the appearance of ethnic cleansing. Ethnic cleansing is not a phrase that should ever be used lightly, and the tragedy is that in this case, its use was undoubtedly apposite.

Bulldozer justice might satisfy the anger of people who have been caught up in riots, and who are accustomed to seeing the criminal justice system grind on for years without result. Indeed, whether it is extra-judicial killings or home demolitions, this is indeed the justification that is trotted out: that the courts are too slow, too prone to giving bail, and too indulgent in handing out acquittals. Therefore, in order to assuage public anger, the state must take it upon itself to deliver "justice" outside the bounds of law.

It should be obvious that this is dangerous and destructive logic. Bulldozer justice is a form of collective punishment, where punishment is not only meted out before guilt is proven, but along with the supposedly guilty individual, their innocent family members are also punished. No amount of populist satisfaction can justify such an action.

Furthermore, punishment without guilt — punishment at the discretion of the state — violates the rule of law. The rule of law is all that stands between a marauding state and the basic safety of individuals. Abandoning the rule of law for frontier justice is the first step towards an authoritarian society where one's safety, physical possessions, and even life and liberty, will be at the whims and fancies of state officials.

The silence of the judiciary

In this context, it falls to the courts to enforce the rule of law and the Constitution. Unfortunately, for more than a year, the courts have been silent; even the Supreme Court of India has, when faced with this situation, purported to accept the state's justification of going after "unauthorised structures." In doing so, the courts have, to use the words of George Orwell, chosen to "reject the evidence of their eyes and ears." The High Court of Punjab and Haryana's order marks the first time that the judiciary has taken active notice of this pattern of lawless bulldozer "justice". One hopes that it is the beginning of the judiciary reinforcing basic constitutional principles and values against state impunity.

THE AGGRESSIVE ARM OF HINDUTVA

The recent violence in Haryana's Nuh, following the Brij Mandal Jalabhishek Yatra, sometimes referred to as Shobha Yatra, in which six people were killed and 70 others injured, has shifted the spotlight, once again, on the Bajrang Dal, an offshoot of the Vishwa Hindu Parishad (VHP).

Members of the Bajrang Dal made up large parts of the Yatra and among those killed in the violence that followed between two clashing sides was a Dal activist. Each side blamed the other for the provocation and the Haryana Police have filed 139 FIRs in relation to the violence. The incident has also led to fissures within the BJP's ruling coalition in Haryana, with the Jannayak Janata Party (JJP), led by Dushyant Chautala.

For the Bajrang Dal, which is a part of the larger Sangh Parivar led by the Rashtriya Swayamsevak Sangh (RSS), this is not the first brush with such incidents and headlines. The Bajrang Dal was set up during the Ram temple movement and represents the muscle behind the aggressive Hindutva agenda, which includes issues such as cow protection, anti-conversion activities and mobilising support against 'Love Jihad'.

The Bajrang Dal was established in 1984, for the "safety" of the Ram Janaki Raths, which were making the rounds in various districts of Uttar Pradesh, mobilising support for the construction of a Ram temple in Ayodhya at the site where the Babri Masjid stood. "Bajrang Dal is the youth wing of the Vishwa Hindu Parishad (VHP)," said Vinod Bansal, spokesperson for both organisations.

As the Ram Janmabhoomi movement, led by the VHP, gathered support, the Bajrang Dal extended its backing to further activities by the seers involved in the agitation, including the Ram Shila Poojan (worship of consecrated bricks) in 1989 and the Kar Seva in Ayodhya in October 1990, which saw police firing and the death of two Kar Sevaks — Ram Kumar and Sharad Kumar Kothari. Ever since, a week-long marking of this event is being celebrated by the Bajrang Dal every year as

Hutatma Diwas (Day of Martyrdom). Another anniversary observed by the Bajrang Dal is December 6, the day the Babri Masjid was brought down — it is celebrated as Shaurya Diwas (day of valour).

After the demolition of the Babri Masjid, the organisation was banned for a year by the Centre, and once the ban was revoked in 1993, former BJP MP Vinay Katiyar became its first all-India chief. It then had branches in 12 States with the motto "Sewa, Suraksha, Sanskar" (Service, Security and Values), which clearly refers to the reasons why the organisation was set up, providing the muscle to the VHP's activities. Currently, Neeraj Doneria is the all-India convener of the Bajrang Dal.

Organisational structure

This emphasis on bal or physical strength runs through the activities of the Bajrang Dal. The organisation is divided into national, state, zonal and a further division called Prakhand, and each of these levels has conveners and co-conveners. For members, there is no registration as such but gatherings of sympathetic youth, depending on their wish to get involved in the activities, include, according to the Bajrang Dal's own website, the recitation of the Hanuman Chalisa once a week, and to be a part of a Balopasana Kendra (worship of physical strength), which is generally a gymnasium.

Hanuman Jayanti is celebrated as Balopasana divas by the Bajrang Dal and the deity is considered an ideal for the average Bajrang Dal activist with its stated aim of providing "security" for Hindutva activities. It was this association [between Lord Hanuman and Bajrang Dal] that the BJP and the VHP tried to whip up in the recent Karnataka polls when the Congress manifesto spoke of banning the Dal. But it turned out to be an unsuccessful campaign as the BJP lost the election to the Congress.

Activists of the Bajrang Dal usually have to be under the age of 40, but at the central level, it can go up to 45. In the Durga Vahini, the women's wing of the Dal, the cut-off age is 35. In the spectrum of Sangh Parivar affiliates, the Dal is considered the most strident, while the BJP, the political wing, is more circumspect.

Concomitant with the Ram temple movement, which gave rise to the Bajrang Dal, are aggressive acts for gauraksha, or cow protection, such as capturing vehicles suspected to be transporting cows. In several cases, these acts ended up in violence, as in the case of the murder of two Muslim men in February, with Bajrang Dal activist Monu Manesar being named in the FIR filed by the Rajasthan Police. In cases where the cow vigilantism does not lead to violence, often police complaints are filed by Bajrang Dal men.

Moving beyond cow vigilantism, the Bajrang Dal got into the personal space with increasing attacks on interfaith marriages by calling them 'Love Jihad'. The Dal is also connected to regular protests and attacks on couples during Valentine's Day, considered a western concept that encourages "immoral" behaviour.

Anti-conversion activities are also high on the Bajrang Dal's agenda. Mr. Bansal claims that the Bajrang Dal's activities have led to the rescue of 85,000 gauvansh (cows), and that "thousands of FIRs have been filed on cow smugglers". "We have also helped get nearly 25,000 of our sisters, who were being coerced into love jihad, out of the situation," Mr. Bansal said.

He makes it a point to emphasise that these are not the only activities of the Bajrang Dal, "although the English media only speaks of gauraksha and prevention of 'Love Jihad' in a derogatory way".

The organisation's "Ek gaon, ek shamshaan, ek mandir" (one village, one crematorium, one temple) programme wherein cleaning and maintenance of these spaces are undertaken, and the help it rendered during the Amarnath Yatra in 1996 are mentioned as its achievements on its website.

No room for compromise

After the violence in Nuh, the VHP helped organise a protest in Delhi over what they termed the targeting of Hindu society and its rituals, and the incident is expected to polarise the atmosphere in Haryana where the BJP is in power with the JJP. Asked whether the fissure within the NDA alliance is worrisome, a VHP leader pooh-poohed the suggestion. "These [referring to the JJP] are bin painde ka lota [a glass without a defined edge], and they roll where they feel like," he said. Quite clearly, the Bajrang Dal, the muscular arm of the Hindutva ideological sphere, feels that its own purpose, excised from electoral considerations, makes it more worthy than a political party and less open to compromises.

WHY ARE ROHINI PANEL'S FINDINGS IMPORTANT?

The story so far:

The Justice G. Rohini-led Commission on the sub-categorisation of Other Backward Classes groups, constituted in October 2017, submitted its long-awaited report to the President of India on July 31, after having received 14 extensions in the last six years. The Commission was initially asked to finish its report in 12 weeks.

What has the Commission examined?

The President had formed the Commission headed by former Delhi High Court Chief Justice G. Rohini in October 2017, to examine the question of sub-categorising the over 2,600 caste groups listed in the Central OBC list.

The Commission had as a Member, Dr. J.K. Bajaj of the Centre for Policy Studies with representatives from the Anthropological Survey of India, the Office of the Registrar General of India, and the Social Justice and Empowerment Ministry.

In the notification announcing its formation, the Commission was tasked with first examining how much of 27% reservation (jobs and education) and other government benefits meant for OBCs was dominated by which caste groups.

The Commission had arrived at the conclusion that a small number of caste groups among all OBC groups, were dominating reservation and other government benefits.

Further, the Commission went on to explore ways of sub-categorising these existing OBC groups in order to make sure benefits can be redistributed equitably. This involved breaking up all OBC caste groups into further categories based on how dominant the communities have been in availing government benefits meant for OBCs.

Subsequently, the Commission proceeded to work out a formula for breaking up the caste groups in a way that would make the highest share of the 27% reservation pie available to the groups that

have historically been crowded out of them; and the least share of the pie going to caste groups that have so far dominated this sphere.

While the Commission's report has now been submitted to the President, it has been learnt that the government will not act on the recommendations in it without detailed deliberations with all concerned stakeholders.

In addition to this, the Commission was also tasked with rationalising the Central OBC list by suggesting corrections and replacements in spellings, which will result in minor changes to the entries.

Why are the findings significant?

With the Rohini Commission's findings expected to throw up exact numbers on OBC communities that have availed benefits since reservation for them began in 1992, this data set will for the first time show the changes, if any, in the socio-economic status of OBC communities that have historically been able to avail benefits.

This is significant in light of the fact that the clamour for a caste census is growing louder among the Opposition and several State governments, including the ones run by the BJP.

Further, the granularity of the data, as envisioned in the Rohini Commission's report, will inevitably have a direct effect on the electoral mathematics of political parties, where communities that have been dominating benefits are also politically dominant.

This has invariably put the ruling Bharatiya Janata Party in a tough spot about whether they would want these recommendations to ever see the light of day.

Why did it take so long for the report to be submitted?

In fact, even in the run-up to the Commission submitting its report to the President this week, the government has been tight-lipped about its functioning.

While the panel was initially given 12 weeks to submit its report, the government, on a six-monthly basis, kept giving it extensions, citing that the Members had sought it.

At first, the government said that the Commission was taking so much time because of the COVID-19 pandemic. However, after that it said that the panel was still working on rationalising the Central OBC list, which it said was a monumental task.

In the last two extensions that were given to the Commission, members of the panel had told The Hindu that their work had been finished and only annexures were being finalised, despite which the extensions were given.

Earlier this year, it was revealed that while salaries and other expenses had been paid to Members and Consultants throughout the six-year period, there was no record of office expenditure incurred in the last two years.

EXPRESS VIEW ON IIM BILL: MIS-MANAGEMENT

Last week, the Lok Sabha passed a Bill that gives the government greater say in the appointment and removal of directors of the Indian Institutes of Management (IIMs). The legislation is a significant — and unwelcome — departure from the IIM Act, 2017, which declared these elite

management schools as "institutions of national importance with a view to help them attain standards of global excellence". It had empowered the board of governors to appoint the director of an IIM on the basis of the recommendations of a search-cum-selection committee.

The new legislation subordinates the boards to the IIMs' Visitor, the President, virtually giving the government veto power in the appointments. The chairperson of the board, hitherto appointed by its other members, will be nominated by the Visitor if the Bill becomes law. The government will also prescribe conditions for the suspension or dissolution of the IIM's board. Other powers of the Visitor also come at the expense of the institution's autonomy — the President can, for instance, institute inquiries and issue directives which will be binding on the IIM management.

Replying to the debate on the Bill, Education Minister Dharmendra Pradhan said that the government will not interfere in the functioning of the IIMs. But his words do not appear persuasive given his ministry's uneasy relationship with these institutions in the past eight years. In 2015, the education ministry envisaged sweeping powers for the government in IIM management — this included making the President the Visitor and giving the Centre a say in the appointment of the board.

To its credit, the PMO overruled the ministry's plans. Then, in 2020, the ministry had objections to the IIM describing its one-year post-graduate programme as MBA — as is the global norm — saying this went against UGC rules. A year later, IIM-Ahmedabad refused to accede to an education ministry directive to review a doctoral thesis that described the BJP as a "pro-Hindu upper caste party".

In recent years, the functioning of the B-schools has invited criticism. Two years ago, the government admitted to irregularities in the appointment of the IIM Rohtak director. The same year, IIM Calcutta's Board and the Institute's Director, Anju Seth, were locked in a turf war — Seth accused the Board's chairperson of infringing on her executive powers and the latter accused the director of improper conduct. These incidents underline the need for checks and balances in the functioning of the IIMs but the government's micromanagement could do more harm than good. The Rajya Sabha should push for a course correction.

CENTRE TO LOOK INTO 'HAVANA SYNDROME': WHAT IT MEANS AND THE TERM'S HISTORY

The Central government has told the Karnataka High Court that it will look into the matter of the 'Havana Syndrome' in India, in response to a Bengaluru resident's recent petition. A single-judge bench of Justice Krishna Dixit disposed of the petition on July 27 after the Centre's counsel agreed to examine the case. It directed the Centre to do so within three months.

The petitioner had approached the court requesting a writ of mandamus for an enquiry on Havana Syndrome in India and the prevention of high-frequency microwave transmission in India.

What is Havana Syndrome?

Havana Syndrome refers to a set of mental health symptoms that are said to be experienced by United States intelligence and embassy officials in various countries. It is worth noting that in general, the word 'syndrome' simply means a set of symptoms. It does not mean a unique medical condition, but rather a set of symptoms that are usually experienced together whose origins may be difficult to confirm.

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What is known as the Havana Syndrome typically involves symptoms such as hearing certain sounds without any outside noise, nausea, vertigo and headaches, memory loss and balance issues.

As the name suggests, it traces its roots to Cuba in late 2016. This was about a year after the US opened its embassy in the capital city of Havana after ties between the two countries were normalised in 2015. Some US intelligence officials and members of the staff at the embassy began experiencing sudden bursts of pressure in their brains followed by persistent headaches, feelings of disorientation and insomnia.

Where else has Havana syndrome been reported?

Since the Cuban incident, American intelligence and foreign affairs officials posted in various countries have reported symptoms of the syndrome.

In early 2018, similar accusations began to be made by US diplomats in China. The first such report was in April 2018 at the Guangzhou consulate. An American employee reported that he had been experiencing symptoms since late 2017. Another incident had previously been reported by a USAID employee at the US Embassy in Tashkent, Uzbekistan, in September 2017.

In 2019 and 2020, such incidents have been reported from within the US — particularly in Washington DC. One incident was even reported at The Ellipse, a lawn adjacent to the White House.

According to US media reports, in the past few years, its officials have reported more than 130 such experiences across the world including at Moscow in Russia, Poland, Georgia, Taiwan, Colombia, Kyrgyzstan, Uzbekistan, and Austria, among others. A New York Times report from 2021 said US Vice-President Kamala Harris was delayed for three hours as she was about to fly to Hanoi, Vietnam, after a US official in Vietnam reported the symptoms.

In India, the first such case was reported in the same year, when a US intelligence officer travelling to New Delhi with CIA director William Burns reported symptoms of Havana Syndrome.

What are the causes of Havana Syndrome?

No one is entirely sure. But initially during the Cuban experience, being in a country that had been hostile to the US for over five decades, the suspicion was on Cuban intelligence or a section within the Cuban establishment that did not want US-Cuba relations to normalise. It was then speculated to be a "sonic attack".

However, further study by scientists in the US and medical examination of the victims began to suggest that they may have been subjected to high-powered microwaves that either damaged or interfered with the nervous system. It was said to have built pressure inside the brain that generated the feeling of a sound being heard. Greater exposure to high-powered microwaves is said not only to interfere with the body's sense of balance but also to impact memory and cause permanent brain damage. Low levels of microwaves are also emitted from mobile phones but they are not targeted.

It was suspected that beams of high-powered microwaves were sent through a special gadget that Americans then called a "microwave weapon".

The use of microwaves as a counter-intelligence tactic has been experimented with since the Cold War and both Russia and the US have made attempts to weaponise it. There have been reports of US embassy officials in Moscow experiencing mental health issues due to the suspected use of microwaves in the 1970s.

So what do US reports say on Havana Syndrome now?

After many years of data collection, experiments and medical examination of victims, the US has as yet not been able to come up with any conclusive evidence suggesting the "microwave weapon" is a reality. No one seems to have an idea what the mechanics of this weapon is and how it functions. There is also a question mark on how the so-called weapon is able to specifically target individuals and not affect all the people in its range.

Some medical experts in the US have outrightly debunked this theory, calling the syndrome a psychological illness amplified by widespread fear of being targeted.

A report from several US security agencies in 2023 concluded that it was unlikely that a foreign adversary of the US could be behind the "anomalous health incidents". "This conclusion…confirms what we already knew," Cuba's Vice Foreign Minister Carlos Fernandez de Cossio told Reuters in an interview after the report's release, saying the US government "leveraged" it to derail relations with Cuba.

And what do we know of Havana Syndrome in India?

As of July 2023, the 2021 incident was the only reported occurrence of the syndrome in India. Sources in the Indian security establishment said in 2021 that they were not aware of any weapon with such capacities being in the possession of an Indian agency. Even if there was one, it was unlikely the government would admit to having acquired such counter-espionage technology given the sensitive nature of intelligence work.

"But why would an Indian agency target the US? Given the geopolitics of today, they are our closest friends," an intelligence official told The Indian Express in 2021.

"Even if we were to assume that the Russians or the Chinese have been able to bring in such equipment without our knowledge, once such a thing comes out, it negatively impacts relations between our country and theirs. Why would they risk that unless they want to hurt us as well?" another intelligence official said.

Without discounting US anxieties over it, another former R&AW officer said, "If a foreign power is doing it, why will they target the US alone. Why aren't other countries reporting the same? Barring the Canadian embassy in Havana, there have been no such reports from officials of any other country anywhere in the world. This is not to say that the US assertions may not be true. But it's a curious case."

GOVT TWEAKS BHARATNET, CLEARS RS 1.39 LAKH CRORE FOR LAST-MILE BROADBAND LINK

The Union Cabinet Friday approved Rs 1.39 lakh crore for modernising the BharatNet project which involves changing its execution strategy and providing fiber connections to the last mile through Village Level Entrepreneurs, official sources said.

With this upgrade, the government is looking to speed up its process in connecting all 640,000 villages over the next 2.5 years.

Just like private telcos Airtel and Jio, which involve local cable operators to provide fixed home broadband services, the government, under the revamped model, will involve village level entrepreneurs or Udyamis to take the fiber connections to the homes on a 50:50 revenue-sharing basis.

The cost for taking the infrastructure to the home will be borne by the government; the rural enterpreneur will only need to be involved in maintenance and operations of home connections, including addressing consumer complaints related to fiber cuts, etc, sources said.

"We laid the fiber under the BharatNet but the issue was how to give the fiber-based internet to households using the same. We ran the pilot in 60,000 villages a year back involving local partners in the villages to connect the households. That was successful," a government official said, adding that involving the Udyamis for the project is expected to give employment to about 250,000 people.

Bharat Broadband Network (BBNL) is the implementation agency of BharatNet, which was merged into BSNL in July last year.

Until now, the government has connected about 194,000 villages, and provided internet connections to 5,67,000 households. Of these, 351,000 fiber connections have been given using the new BharatNet Udyami project, sources said.

3rd package & a reality check

For BharatNet, this is the third such package approved by the Centre. In 2017, the Cabinet approved Rs 42,068 crore for the first two phases. In 2021, the Cabinet allocated another Rs 19,041 crore to implement the last-mile connectivity under a PPP model which failed to attract much interest.

Under the BharatNet project, the home broadband package will start from Rs 399 a month, giving 30 Mbps unlimited data, bundled with OTT offering, etc.

The other plans include Rs 599, Rs 799, etc. In comparison, market leader Jio's entry level fiber plan starts at Rs 198 per month, offering unlimited data and voice at 10 Mbps speed, and television channels as well at Rs 100 extra.

Airtel's cheapest bundled plan, which comes with a broadband connection and entertainment apps, is priced at Rs 699 per month with speed up to 40 Mbps and other bundled services, including TV channels and OTT apps.

"BharatNet has an edge over competitors because these private operators are not present in rural areas. Further, quality of services by BharatNet will also make people choose its services," the official said, adding that there will be an automated network operation centre for handling complaints.

In the pilot, BharatNet registered an average speed of 175 GB per household per month. According to industry executives, the pace of BharatNet has been slow given that the government has been able to make just 194,000 gram panchayats service ready so far. From November 2022 till March this year, about 6,000 gram panchayats have been made service ready.

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WHAT IS THE DATA PROTECTION BILL OF 2023?

The story so far:

The journey towards a data protection legislation can be traced back to 2017 when an expert committee was constituted by the Ministry of Electronics and Information Technology (MeiTY). The major development came in December 2021 when the Data Protection Bill, 2021 (DPB, 2021) was released. However, it was withdrawn in Parliament by Minister for Communications and Information Technology Ashwini Vaishnaw on August 3, 2022. On November 18, 2022, a draft of the Digital Personal Data Protection Bill, 2022 (DPDPB, 2022) was released for public consultation. The submissions made under this consultation process were not made public. The request to publicly release the submissions was also denied in a Right to Information application. One year on, the 2023 Bill has been tabled in Parliament without clarifying how and on what basis these changes were incorporated.

Who does it protect?

In a first, the new Bill introduces duties and penalties on a data principal (DP). Clause 11 of Chapter III states that the DP has the right to request from the data fiduciary (DF), a summary of the personal data being processed, identities of all the DF with whom its personal data has been shared and so on, subject to a few exceptions. Under Clause 12, users can seek correction, completion, update and erasure of their personal data. Interestingly, the provision which allowed a DF to reject this request has been removed. Users have also been given the right of grievance redressal (Clause 13) and the right to nominate another individual in the event of death or incapacity to exercise their rights (Clause 14).

While the impetus for a data protection legislation must be to protect a DP's personal data from being unwittingly exploited, the Bill appears to be designed in a manner that this protection is compromised. Interestingly, the Bill further goes on to impose duties and penalties on the DP.

To exemplify the above, Clause 15(d) of this chapter states that the DP must ensure not to register a false or frivolous grievance or a complaint with a DF or the Data Protection Board (DPB), and failure to adhere with this may enable a penalty of ₹10,000 (Chapter VIII). This is an onerous obligation which may effectively prevent a DP from raising grievances.

Who does it exempt?

Data breaches are becoming regular occurrences. It was reported in June 2023 that a major privacy breach with respect to the CoWIN portal had taken place and personal details of vaccinated users had been leaked on Telegram. Recently, in July 2023, about 12,000 confidential records of State Bank of India employees were reportedly made public on Telegram. In view of this, a cause of great concern that arises in the Bill is the exemption under Clause 17(2)(a) which, if notified, is granted to the government and its authorities.

On five specified grounds, the Bill exempts government authorities, as notified, marking a discernible expansion of the scope of exemption. Personal data which is processed for research, archiving, or statistical purposes will also be exempted under Clause 17(2)(b).

While previous iterations of the Bill also provided exemptions, this has now been broadened to state that data processing undertaken by the Union government on information provided to it by an exempted instrumentality will continue to remain exempted from the purview of this law.

What does it seek to amend?

The changes that the Bill seeks to implement by way of Clause 44 are significant. For instance, Section 43A of the Information Technology Act, 2000 (IT Act) imposes an obligation on corporates to award damages to affected persons in case of negligent handling of their sensitive data. Clause 44(2) of the Bill aims to exclude the application of Section 43A, thereby rendering an individual who has suffered breach of their data without any relief.

Clause 44(3), which seeks to amend the entire Section 8(1)(j) of the Right to Information (RTI) Act, 2005 and replace it with "information which relates to personal information", has received heavy criticism from stakeholders. Previously, qualifiers existed which narrowed the information that could be withheld by the public information officers. Now, the removal of "has no relationship to any public activity or interest, or which would cause unwarranted invasion of the privacy of the individual" widens the scope of withholding information.

Does it protect users?

A widely appreciated departure from the previous iterations is the DF's obligation to notify the DP in case of personal data breach. Other obligations imposed on DF include notifying the DP about the purpose for which their data may be processed, and the manner in which they may make a complaint to the DPB, withdraw consent, and seek grievance redressal.

However, as discussed before, there is a deviation from DPB 2021 with removal of the provision for compensating a user affected by personal data breach. In further departure, Clause 5, which outlines notice obligations on DF does not mandate them to inform DPs about data being shared with third-parties, duration of storage of data, and transfer of data to other countries. Lack of obligation on the part of DF to notify DP at the offset makes the DP's right to obtain information pertaining to their personal data perfunctory.

"The assumed consent framework of DPDPB, 2023, on the other hand, remains unchanged. In place of using the term "deemed consent", which was present in DPDPB, 2022, Clause 7 uses the term "certain legitimate uses", which outlines the various situations in which personal data may be processed without obtaining the DP's informed consent. The DPDPB, 2023 fails to differentiate between "personal data" and "sensitive personal data", consequently negating the elevated level of protection associated with the latter." Chapters V and VI deal with the DPB which is the primary authority for ensuring that DPDPB, 2023, is upheld. DPB's independence has also been in question since the 2019 version. DPDPB, 2023, mandates all its members to be appointed by the Union Government. A favourable evolution is the clarification that salary, allowances, and other terms of service of DPB members cannot be varied to their disadvantage post appointment. However, only adjudicatory and not regulatory powers have been bestowed upon the DPB.

DEVELOP INDIGENOUS WEB BROWSER, GRAB CASH PRIZES

Cash prizes amounting to ₹3.4 crore are being promised to developers who help create an indigenous Indian Web browser "for the world", the Ministry of Electronics and Information Technology announced on Wednesday.

An important caveat is that browser ideas entered into this competition will have to trust the Controller of Certifying Authorities (CCA), the Indian government's authority for digital signatures, including SSL (Security Sockets Layer) certificates.

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SSL certificates are used to encrypt websites and to make sure that browsers know that a website is not being modified or impersonated by attackers. Browsers know to trust these certificates if they are issued by a certifying authority that is in turn trusted by a 'root certifying authority'.

India does not have a root certifying authority trusted by major browsers such as Google Chrome, Mozilla Firefox and Microsoft Edge.

This has led to a situation where the government operates a root certifying authority that is legally valid under Indian law — the Root Certifying Authority of India, set up in 2000 under the CCA — but the certificates issued under its purview are largely not recognised by Web browsers, leading Indian government and private websites to purchase SSL certificates from foreign certifying authorities.

This follows at least one major security lapse linked to an Indian certifying authority. One CCA-approved organisation — the National Informatics Centre (NIC), which hosts and maintains several Union and State Government websites — has had a contentious history as far as being trusted by browsers goes.

In July 2014, operating systems such as Windows and web-browser developers for Google Chrome and Firefox stopped trusting India's CCA in their 'root store,' a repository of trusted root certifying authorities, after the NIC appeared to issue fraudulent certificates to websites.

HOW THE CURRENT LUNAR MISSIONS DIFFER FROM THE LAST MOON RUSH

The moon is bracing to deal with a crowd in a few days' time. Chandrayaan-3 is already knocking on its doors, scheduled to descend on its surface on August 23 or 24. Russia's Luna 25 spacecraft is preparing to begin its journey later this week, and will make a touchdown around the same time as Chandrayaan-3. Japan's SLIM (Smart Lander for Investigating Moon) is slated to join the party soon after, with its launch scheduled for August 26.

SLIM's landing time has not been revealed yet, but if it takes a shorter route to the moon and arrives within two weeks of its launch, this would be the first time that three spacecraft would be crawling on the lunar surface at the same time.

And this is just the buildup. The moon will soon have to get used to welcoming frequent visitors from earth — not just the robotic ones but also those in the flesh. Two more lunar missions are scheduled to go up later this year, and at least five are in the pipeline over the next three years, including crewed missions.

The original race

But this present rush to go to the moon pales in comparison to the heavy traffic that was witnessed in the 1950s and 1960s, at the very dawn of the space age. The moon missions began immediately after the then Soviet Union succeeded in sending out the first ever spacecraft, Sputnik, in 1957. In fact, within a period of three years, as many as 14 attempts were made to go to the moon. Most of them failed, but at least three had remarkable success, including Luna 3, which flew by the moon in 1959 and took the first pictures of the lunar surface.

The 1960s saw an incredible competition between the US and the then USSR to go to the moon, eventually culminating in the historic 1969 touchdown of Apollo 11, which enabled human beings

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to first put foot on the moon. In that one decade, 55 moon missions were launched, an average of almost five a year.

But after six Apollo missions landed two human beings each on the moon by 1972, the lunar missions suddenly stopped, almost as abruptly as they had begun. In fact, the Soviet Union never sent another moon mission after Luna 24 in 1976. The Luna 25 that is being launched this Thursday would be the first in 47 years by Russia, the successor state. There was not even a single moon mission by any country in the 1980s.

Rediscovering the moon

When the moon exploration resumed with Japan's first mission in 1990, it did not start from where scientists had left off in the early 1970s, but almost afresh. And it has progressed on almost a parallel track ever since, seemingly oblivious of the achievements of the 1960s and 1970s.

This time it was not just the United States and Russia. A number of other countries joined in — Japan, China, India, and later South Korea and Israel. A few others, like Saudi Arabia, are in the queue.

The motivations and purpose of the current round of moon missions are very different from those half-a-century earlier. The earlier round was guided almost solely by the desire of the two prevailing superpowers to outdo each other, win a technological race, and gain a psychological advantage. The astonishing achievements that resulted from the process helped mainly to fuel the Cold War rivalry. The technology ecosystem that could have built upon these achievements was missing, and was not the focus of the lunar missions.

Also, those missions were intrinsically unsustainable. They were extremely expensive, massively energy intensive, and very risky. The failure rate was very high, almost 50 per cent. That kind of risk, expenditure and energy inefficiency would just not be acceptable in current times.

For the current round of lunar missions, the destination is still the moon, but it is just a stepping stone to much bigger objectives in space exploration. Scientists now know a whole lot more about the moon, have a much better understanding of its environment and resources, and have a fair idea of how to utilise the trips to the moon more fruitfully.

Lunar missions are far cheaper now, use a host of new technologies and materials to economise their trip, and have a high degree of safety. In fact, since the resumption of lunar missions in 1990, not a single mission has been a complete failure.

Also, while the journey might be the same, the motivation for undertaking it is not. The current round of lunar missions is all about exploring the possibilities of a long-term stay on the moon, using the resources available in situ, and then, not in a very long time, possibly using it as a launch pad for travelling deeper into space and to other extra-terrestrial bodies. These possibilities did not exist in the 1960s and 1970s. Setting up a permanent station on the moon is a fairly distinct possibility within a decade or two.

This round of moon missions can trigger a different kind of competition — about territory and resources — among countries, but that is some distance away. The immediate objective is to go and establish oneself there.

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LUNA-25 WILL NOT AFFECT CHANDRAYAAN: RUSSIAN SPACE AGENCY

Luna-25 was launched from Russia's Vostochny spaceport in the country's far east region on Friday. Its lunar lander is expected to reach the moon on August 23, the same day on which Chandrayaan-3 is also expected to land on the lunar surface.

"Luna-25 and Chandrayaan-3 have different landing areas planned. There is no danger that they will hamper each other's functions or collide. There is enough space on the moon for everyone. Luna-25 is static, it will not move on the surface of the moon," Ilya Morozov, Center of internal and external communications, State Corporation Roscosmos, told The Hindu.

"Launching Luna-25 onto the flight trajectory to the moon will take one hour and 20 minutes. The duration of the flight from earth to the moon is five days. Stay in lunar orbit — from five to seven days, depending on the landing area. Three areas are selected for the lunar landing," Mr. Morozov said.

The Indian Space Research Organisation (ISRO) plans to have the Chandrayaan-3 lander and rover touch down near the lunar south pole region at 5.47 p.m. on August 23.

Six active lunar orbiters

According to ISRO, there were six active lunar orbiters as of July 2023. "Currently, the only operating rover is China's Yutu-2 rover released by Chang'e 4, which operates on the far side," ISRO said on August 9.

"There is no interaction with ISRO on the Luna-25 project. At the same time, the Russian side is open to cooperation on the participation of the Indian side in implementing the project of the International Scientific Lunar Station (ILRS). Moreover, we are ready to consider the possibility of placing a Russian payload on future Indian missions," Mr. Morozov said.

The ILRS is a planned lunar base currently persuaded by Roscosmos and the Chinese space agency.

ISRO on Friday congratulated Russian space agency Roscosmos for the successful launch of its moon mission Luna-25, the country's first lunar lander in 47 years.

India and Russia are both aiming to be the first ever country to land on the moon's south pole.

INDIAN GPS NAVIC TO BE LINKED TO AADHAAR ENROLMENT DEVICES

The Navigation with Indian Constellation or NavIC, the seven-satellite system that makes up India's version of the American GPS (global positioning system), will soon be integrated into Aadhaar enrolment devices across the country, the Department of Space (DoS) told the Parliamentary Committee of Science and Technology.

"The department has facilitated successful conduct of field trials, and is providing technical expertise in finalisation of procurement specification of the devices," it said in response to queries by the committee. The committee made its report public on Thursday. Currently, the Aadhaar enrolment kits that are used to collect and verify personal details are linked to GPS.

CAN SMRS HELP INDIA ACHIEVE NET ZERO?

The story so far:

The world's quest to decarbonise itself is guided, among other things, by the UN Sustainable Development Goal 7: "to ensure access to affordable, reliable, sustainable and modern energy for all". Since the world still depends on fossil fuels for 82% of its energy supply, decarbonising the power sector is critical; the share of electricity in final energy consumption will also increase by 80%-150% by 2050. The recent uptick in coal consumption in Europe, despite the increase in solar and wind power, suggests that reliable, 24/7 low-carbon electricity resources are critical to ensure the deep decarbonisation of power generation, along with grid stability and energy security. Small modular reactors — a type of nuclear reactor — can be helpful to India in this regard.

What are the challenges of decarbonisation?

The transition from coal-fired power generation to clean energy poses major challenges, and there is a widespread consensus among policymakers in several countries that solar and wind energy alone will not suffice to provide affordable energy for everyone. In decarbonised electricity systems with a significant share of renewable energy, the addition of at least one firm power-generating technology can improve grid reliability and reduce costs.

According to the International Energy Agency, the demand for critical minerals like lithium, nickel, cobalt, and rare earth elements, required for clean-energy production technologies, is likely to increase by up to 3.5 times by 2030. This jump poses several global challenges, including the large capital investments to develop new mines and processing facilities. The environmental and social impacts of developing several new mines and plants in China, Indonesia, Africa, and South America within a short time span, coupled with the fact that the top three mineral-producing and mineral-processing nations control 50-100% of the current global extraction and processing capacities, pose geopolitical and other risks.

What are the issues with nuclear power?

Nuclear power plants (NPPs) generate 10% of the world's electricity and help it avoid 180 billion cubic metres of natural gas demand and 1.5 billion tonnes of CO_2 emissions every year. Any less nuclear power could make the world's journey towards net-zero more challenging and more expensive.

NPPs are efficient users of land and their grid integration costs are lower than those associated with variable renewable energy (VRE) sources because NPPs generate power 24x7 in all kinds of weather. Nuclear power also provides valuable co-benefits like high-skill jobs in technology, manufacturing, and operations.

This said, conventional NPPs have generally suffered from time and cost overruns. As an alternative, several countries are developing small modular reactors (SMRs) — nuclear reactors with a maximum capacity of 300 MW — to complement conventional NPPs. SMRs can be installed in decommissioned thermal power plant sites by repurposing existing infrastructure, thus sparing the host country from having to acquire more land and/or displace people beyond the existing site boundary.

What are the advantages of SMRs?

SMRs are designed with a smaller core damage frequency (the likelihood that an accident will damage the nuclear fuel) and source term (a measure of radioactive contamination) compared to conventional NPPs. They also include enhanced seismic isolation for more safety. SMR designs are also simpler than those of conventional NPPs and include several passive safety features, resulting in a lower potential for the uncontrolled release of radioactive materials into the environment. The amount of spent nuclear fuel stored in an SMR project will also be lower than that in a conventional NPP.

Studies have found that SMRs can be safely installed and operated at several brownfield sites that may not meet the more stringent zoning requirements for conventional NPPs. The power-plant organisation can also undertake community work, as the Nuclear Power Corporation did in Kudankulam, Tamil Nadu, before the first unit was built.

Accelerating the deployment of SMRs under international safeguards, by implementing a coal-to-nuclear transition at existing thermal power-plant sites, will take India closer to net-zero and improve energy security because uranium resources are not as concentrated as reserves of critical minerals.

Most land-based SMR designs require low-enriched uranium, which can be supplied by all countries that possess uranium mines and facilities for such enrichment if the recipient facility is operating according to international standards. Since SMRs are mostly manufactured in a factory and assembled on site, the potential for time and cost overruns is also lower. Further, serial manufacture of SMRs can reduce costs by simplifying plant design to facilitate more efficient regulatory approvals and experiential learning with serial manufacturing.

Since SMRs are designed to operate for more than 40 years, the levelised cost of electricity is $60-90 per MWh. The figure is expected to drop rapidly after 2035, by when the SMRs ordered by a number of east-European countries from NuScale and GE Hitachi are expected to come online. The costs will decline steepest for India when reputed companies manufacture SMRs. This at least was the reason SMRs were included in the U.S.-India joint statement after Prime Minister Narendra Modi met U.S. President Joe Biden in June 2023.

What is the need for an efficient regulatory regime?

This said, an efficient regulatory regime comparable to that in the civil aviation sector — which has more stringent safety requirements — is important if SMRs are to play a meaningful role in decarbonising the power sector. This can be achieved if all countries that accept nuclear energy direct their respective regulators to cooperate amongst themselves and with the International Atomic Energy Agency to harmonise their regulatory requirements and expedite statutory approvals for SMRs based on standard, universal designs.

How can SMRs be integrated with the national grid?

India's Central Electricity Authority (CEA) projects that the generation capacity of coal-based thermal power plants (TPPs) in India must be increased to 259,000 MW by 2032 from the current 212,000 MW, while enhancing the generation capacity of VRE sources to 486,000 MW from 130,000 MW. Integrating this power from VRE sources with the national grid will require additional energy storage — to the tune of 47,000 MW/236 GWh with batteries and 27,000 MW from hydroelectric facilities.

The CEA also projects that TPPs will provide more than half of the electricity generated in India by 2031-2032 while VRE sources and NPPs will contribute 35% and 4.4%, respectively. Since India has committed to become net-zero by 2070, the country's nuclear power output needs a quantum jump. Since the large investments required for NPP expansion can't come from the government alone, attracting investments from the private sector (in PPP mode) is important to decarbonise India's energy sector.

What are the legal and regulatory changes required?

The Atomic Energy Act will need to be amended to allow the private sector to set up SMRs. To ensure safety, security, and safeguards, control of nuclear fuel and radioactive waste must continue to lie with the Government of India. The government will also have to enact a law to create an independent, empowered regulatory board with the expertise and capacity to oversee every stage of the nuclear power generation cycle.

The security around SMRs must remain under government control, while the Nuclear Power Corporation can operate privately-owned SMRs during the hand-holding process.

Finally, the Department of Atomic Energy must improve the public perception of nuclear power in India by better disseminating comprehensive environmental and public health data of the civilian reactors, which are operating under international safeguards, in India.

EXPRESS VIEW ON SCIENCE AWARDS: WITHHOLDING LAURELS

Every year, on September 26, the Council for Scientific and Industrial Research (CSIR) observes its Foundation Day by recognising the work of scientists below the age of 45. The announcement of the award, instituted in the name of the Council's founder-director, Shanti Swarup Bhatnagar, has been a keenly awaited event in the scientific community's calendar since 1958. But last year, the CSIR's Foundation Day went by without this centrepiece event — the list of awardees was, reportedly, decided but not announced.

A day later, Science and Technology Minister Jitendra Singh said that the government had decided to "withhold" the Bhatnagar awards as a part of a "rationalisation" endeavour. This year, too, there is no sign that the CSIR is drawing up a list of Bhatnagar laureates — the government is reportedly working on a "new structure of science awards". It is, of course, well within its remit to redesign the criteria for recognising talent. But why constrict CSIR's autonomy and deprive mid-career scholars — many of whom may have resisted the temptation to work overseas — of the public recognition that, by all accounts, has spurred many young minds to become more creative and take on difficult challenges?

The list of Bhatnagar awardees comprises some of the pioneering figures of Indian science — Vikram Sarabhai, Madhav Gadgil, R A Mashelkar, Ashis Dutta, Ashok Jhunjhunwala, Raja Ramana, Jayant Narlikar, Homi Sethna and C N R Rao. Of course, recognising talent early is fraught with subjectivity and there is scope for reform in selection processes. But putting the prestigious award on hold without a convincing explanation does more harm than good. Research involves painstaking work that can stretch over years, even decades. A researcher has to regularly contend with funding delays and vexing bureaucratic interference. The uncertainty over the Bhatnagar awards will be dispiriting to those who work under such conditions, especially because, last year, the government discontinued nearly 300 awards and fellowships. Such disincentives could result in the country losing out on promising talent.

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The government has repeatedly underlined its desire to make India a force to reckon with in the knowledge economy and arrest brain drain. Last year, while inaugurating the first Centre-state science conclave, Prime Minister Narendra Modi said that the "country has not celebrated the work of scientists as much as it should have done". The government's attitude towards the premier award for young scientists does great disservice to the PM's vision. It should announce a list of Bhatnagar laureates this year.

REVISED MANUFACTURING RULES FOR DRUG FIRMS: WHAT CHANGES, AND WHY

The government recently directed all pharmaceutical companies in the country to implement the revised Good Manufacturing Practices (GMP), bringing their processes at par with global standards. Larger companies with a turnover of over Rs 250 crore have been asked to implement the changes within six months, while medium and small-scale enterprises with turnover of less than Rs 250 crore have been asked to do so within a year.

This comes at a time when India is promoting itself as the global manufacturing hub for generic medicines.

What was the need for the improved standards?

One, implementation of the new norms will bring the Indian industry on par with global standards.

Two, there have been a string of incidents where other countries have reported alleged contamination in India-manufactured syrups, eye-drops, and eye ointments. The deaths of 70 children in the Gambia, 18 children in Uzbekistan, three persons in the United States, and six deaths in the Cameroon have been linked to these products.

Three, a risk-based inspection of 162 manufacturing units by the government found several deficiencies — incoming raw materials not being tested before use, product quality not being reviewed , absence of quality failure investigation, infrastructure deficiency to prevent cross-contamination, faulty design of manufacturing and testing areas, missing qualified professionals, and poor documentation.

This is also important seeing only 2,000 of the 10,500 drug manufacturing units in the country at present meet global standards, being WHO-GMP certified.

The improved standards will ensure that pharmaceutical companies follow standard processes, quality control measures, and do not cut corners, improving quality of medicines available in India as well as sold in global market.

In fact, implementation of the revised good manufacturing practices (GMP) as listed in the 2018 draft schedule M of the drugs and cosmetics rules was one of the measures suggested during a Chitan Shivir after the string of incidents. The stakeholders had also suggested creating a country-wide IT platform that can bring in uniformity across states on processes followed for licensing and inspection, among others, ensuring that the quality of medicine manufactured anywhere in the country would be the same.

What are the major changes?

The revised GMP guidelines focus on quality control measures, proper documentation, and IT backing to maintain quality of medicines produced.

The new guideline introduces pharmaceutical quality system, quality risk management, product quality review, and validation of equipment. This will mean companies will have to carry out regular quality reviews of all its products, verify consistency of the quality and the processes, thorough investigation of any deviation or suspected defect, and implementation of any preventive actions. It also suggests a change control system to evaluate all changes that may affect the production or quality of the product.

As per experts in drug regulation, while some of these processes were followed, they weren't properly documented as needed by global regulators. "Without proper documentation, no regulator would agree that the steps were taken. The new guideline seeks to improve this," an official said.

The companies will also have to carry out stability studies as per the climate conditions. "Most companies at present keep their samples stored under recommended conditions and test for various parameters from time to time. Now, they will be needed to mandatorily maintain the drugs in a stability chamber, set the proper temperature and humidity, and carry out an accelerated stability test as well."

The guidelines also state that companies should have GMP-related computerised systems, which ensure that there is no tampering of data related to the processes. Such GMP systems will prevent unauthorised access and changes to the data. There will also be controls against omission of data. In case sensitive data is entered manually to the system, there will be additional checks to validate the accuracy of the data. Backups would also be created to ensure there is no loss of data.

"These computer programmes will be designed to automatically record all the steps followed and checks done, which will ensure all the processes are followed to the T and there is no tampering," said an expert.

In addition, the new schedule M also lists out the requirements for additional types of products, including biological products, agents with radioactive ingredients, or plant-derived products. The new schedule also lists the requirement for investigational products being manufactured for clinical trials.

How will the changes help?

Instituting the same quality across the industry will give confidence to regulators from other countries, said an expert.

In addition, it will improve the quality of drugs in the domestic markets. Most of the 8,500 manufacturing units that are not WHO-GMP certified supply medicine within India.

"This is a very welcome step by the government as it will ensure that all the manufacturing units in the country are at par with global standards, reducing the need for repeated inspections by different regulators. It will make India a quality pharmaceutical hub of the world. In addition, it will ensure that our citizens also receive export-quality medicines," said Narender Ahooja, former drug controller of Haryana.

When will the changes be implemented?

Union health minister Mansukh Mandaviya said implementation would begin August 1 onwards, meaning the bigger companies will now have six months and smaller companies a year to implement the changes.

The new schedule M, however, is yet to be notified, say experts.

A drug manufacturer said: "Initially when the draft guidelines were released, the industry said that at least 36 months would be needed to make the necessary changes. The deadline of one year might get extended. However, it is the smaller companies who have to make drastic changes, most bigger companies in India already follow the global GMP."

To help such companies, the department of pharmaceuticals also has a scheme to provide credit-linked capital and interest subsidy for upgradation of MSME units.

INDIA TAKES FIRST STEP TO REMOVE ANIMALS FROM DRUG-TESTING

An amendment to the New Drugs and Clinical Trial Rules (2023), recently passed by the Government of India, aims at stopping the use of animals in research, especially in drug testing. The amendment authorises researchers to instead use non-animal and human-relevant methods, including technologies like 3D organoids, organs-on-chip, and advanced computational methods, to test the safety and efficacy of new drugs.

Current drug-development pipeline

Every drug in the market goes through a long journey of tests, each designed to check whether it can treat the disease for which it was created and whether it has any unintended harmful effects. For a long time, the first step of this process has been to test the candidate molecule in at least two animal species: a rodent (mouse or rat) and a non-rodent, such as canines and primates.

However, humans are more complex creatures, and biological processes and their responses often vary from person to person as well, based on factors such as age, sex, pre-existing diseases, genetics, diet, etc. – and a lab-bred animal species reared in controlled conditions may not fully capture the human response to a drug.

This 'mismatch' between the two species is reflected in the famously high failure-rate of the drug development process. Despite increasing investment in the pharmaceutical sector, most drugs that cleared the animal-testing stage fail at the stage of human clinical trials, which come towards the end of the pipeline.

Alternative testing modes

The limitations of the conventional testing process, beginning with animals, have led an increasing number of researchers to focus on systems that do a better job of capturing the intricacies of human biology and predicting humans' responses.

In the last few decades, several technologies have been developed using human cells or stem cells. These include millimetre-sized three-dimensional cellular structures that mimic specific organs of the body, called "organoids" or "mini-organs".

Another popular technology is the "organ-on-a-chip": they are AA-battery-sized chips lined with human cells connected to microchannels, to mimic blood flow inside the body. These systems capture several aspects of human physiology, including tissue-tissue interactions and physical and chemical signals inside the body.

Researchers have also used additive manufacturing techniques for more than two decades. In 2003, researchers developed the first inkjet bioprinter by modifying a standard inkjet printer.

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Several innovations in the last decade now allow a 3D bioprinter to 'print' biological tissues using human cells and fluids as 'bio-ink'.

Such technologies, researchers say, are bringing us closer to recreating a human tissue or organ system in the laboratory.

These systems promise to reshape drug-design and -development. Since they can be built using patient-specific cells, they can also be used to personalise drug-tests.

ORGAN SHORTAGE CONTINUES TO COST LIVES

With a waiting list of over three lakh patients and at least 20 persons dying each day waiting for an organ, India's paucity of organ donations, especially cadaver donations, has been exacting a steep toll.

Health Ministry data show that the number of donors (including cadavers) grew from 6,916 in 2014 to only 16,041 in 2022.

Vivek Kute, secretary, Indian Society of Organ Transplants, said that India's deceased organ donation rate had been under one donor per million population for a decade now.

"India needs to increase this to 65 donations per million population and for that to happen, public sector healthcare must step up. The country has about 600 medical colleges and over 20 AIIMS. Even if we get one donation each from them every year we will be in better shape. Even worldwide, only 10% of patients needing organs get them in time. Spain and the U.S. have better organ donation systems, clocking 30-50 donations per million. The need of the hour is to train trauma and ICU doctors to help patients' families to come forward and donate. In India, living donors comprise 85% of all donors," Dr. Kute said.

Poor record

Data from 2022 show India's poor record in cadaver donations.

The country registered 1,589 kidney, 761 liver and 250 heart transplants in the deceased category that year. Kidney and pancreas transplants grew from three in 2014 to 22 in 2022.

In contrast, living donor kidney transplants rose from 4,884 in 2014 to 9,834 in 2022.

Liver transplants in this category grew from 1,002 to 2,957.

Experts say one person is added to the wait list every 10 minutes in the country.

Though the Ministry has announced a series of steps to promote organ donations, including doing away with the domicile rule; removal of age bar for registration of recipients; removal of fee for registration for transplant; easing rules on withdrawal of life support (passive euthanasia); facilitation of organ transport across the country; and giving special casual leave for employed organ donors, these are not enough, experts say.

Anant Kumar, chairman, Urology, Renal Transplant and Robotics, Max Super Speciality Hospital, Saket, said that India faces a significant disparity between demand and supply in kidney transplant.

"The annual need for 2,00,000 kidney transplants highlights the pressing urgency of the situation. However, a mere 10,000 transplants are performed each year, revealing a staggering gap. The demand for deceased donors is substantial because many families lack suitable living donors. Therefore, relying on deceased donors can help partially meet this demand," Dr. Kumar said.

He added that statistics indicate around 70%-75% of donors are women. Wives, mothers, and sisters have emerged as the most prevalent sources of donation.

Greater awareness

- One cadaver can save up to eight lives.

- Two donated kidneys can free two patients from dialysis treatment.

- One donated liver can be split among two patients on the wait list.

- Two donated lungs mean two other patients are given a second chance, and a donated pancreas and donated heart translate to two more patients receiving the gift of life.

One tissue donor — someone who can donate bone, tendons, cartilage, connective tissue, skin, corneas, sclera, and heart valves and vessels — can save the lives of as many as 75 people.

Today, India has greater awareness about organ donation and doctors say more families are coming forward for this noble deed.

Ministry data show that last year the largest number of deceased organ donors were from Telangana, Tamil Nadu, Karnataka, Gujarat, and Maharashtra. On the other hand, the most number of living donors was reported from Delhi-NCR, Tamil Nadu, Kerala, Maharashtra, and West Bengal.

Additionally, the largest number of cadaver transplants took place in Tamil Nadu and Telangana.

THE ENIGMATIC INDIAN EAGLE-OWL

The Indian eagle-owl was classified as a species only in recent years, thus distinguishing it from the Eurasian eagle-owl. The Indian species is an imposing bird. The slightly larger female can reach a total length of two and a half feet, with a wingspan of six feet. Prominent ear tufts that look like horns are seen to project from its head. One theory holds that these have evolved to impart a threatening look that keeps away predators. If so, the horns are indeed successful at imparting an aura of menace.

Its nocturnal habits have meant that very little is known about this bird. The widespread range — the entire Indian peninsula — would seem to indicate that it is a stable population. But nobody knows for sure, as it is not a very common bird. Their total numbers have never been estimated.

Many bird species face decline today as the total forested area in our country has suffered a decline. But the Indian eagle-owl does not have a dependency on forests. The regular items on their menu, such as rats, bandicoots, and even bats and doves are best hunted over open scrubland and agricultural tracts. Nearby rocky perches and crags provide ideal settings for its nests.

Myths, superstitions

Near human settlements, they prefer mango trees. In rural India, many superstitions surround this bird and its loud double-hoot calls. They are considered bearers of ill omens. The noted

ornithologist Salim Ali documented folklore in which an eagle-owl, when trapped and starved, would speak in a human voice and portend the future of its listeners.

This is in line with myths in many cultures, ranging from the Greeks to the Aztecs, of the presaging powers of owls in general.

In some they foretold victories in battles, in others they warned of approaching dangers. But then we also identify them with wisdom. The Goddess Lakshmi's Uluka is an emblem of knowledge and prosperity.

The negative superstitions associated with the Indian eagle-owl make us reflect on its ferocious defensive tactics in nesting areas.

The nest, with up to four eggs, is often no more than a scratched out hollow, easily approached by a mongoose or a human. These owls show heckling behaviour, and will swoop down on the intruding person, striking the head from behind with its talons.

Benefits to agriculture

Farmers definitely profit from the presence of this owl. Research done by the Ela Foundation and the Zoological Survey of India has shown that Indian eagle-owls nesting near agricultural lands had more, and healthier, owlets than scrubland nesters.

The former benefited from the abundant populations of rodents near farms.

What lies ahead for these owls? India has seen growing interest in our birds. Birding, as the hobby is called, attracts more and more enthusiastic volunteers, who add data to bird counts, surveys and migration maps.

But these are mostly daytime activities in which owls are always under-represented. It is hoped that nocturnal birds such as the Indian eagle-owl will have their day too.

CLOUDED LEOPARDS PLAY HIDE-AND-SEEK IN WOODS

Two scientists from the Wildlife Institute of India (WII) have found that the clouded leopard in western Assam's Manas National Park and Tiger Reserve seems to play a mysterious game of hide-and-seek in the tropical canopy forests.

The mainland clouded leopard (Neofelis nebulosa) is often likened to the Ice Age sabretooth because it has the largest canines in proportion to its skull size among all cat species. It also has rotating rear ankles that enable it to climb down head first from trees, unlike the other felines.

The duo — carnivore ecologist Salvador Lyngdoh and research scholar Urjit Bhatt, both from the Department of Landscape-level Planning and Management at WII — also observed that the cat with cloud-like spots on its hide does not follow any specific pattern of operating in a certain space, unlike other carnivores.

They seemed to go wherever they pleased without worrying about other predators, primarily because of their ability to climb trees, even hang upside down from large branches, the study published in Oryx—the International Journal of Conservation said.

"The clouded leopards are basically the ninjas of the forest, striking with agility and strength," Mr. Lyngdoh told The Hindu.

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

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The clouded leopard is categorised into two species: the mainland clouded leopard distributed from central Nepal to peninsular Malaysia, and the Sunda clouded leopard (Neofelis diardi) native to Borneo and Sumatra.

The mainland clouded leopard is tagged vulnerable on the International Union for Conservation of Nature(IUCN) Red List and is considered at high risk of extinction in the wild due to deforestation and poaching.

"Despite this, knowledge of the animal's ecology and population status remains limited. We investigated its population density, habitat utilisation, and spatial and temporal ecology in the 500 sq. km Manas, a UNESCO World Heritage Site," the study said.

NEEDED INTERVENTION

The Wildlife Institute of India and the National Tiger Conservation Authority, who are responsible for the quadrennial 'tiger census' reports, recently updated their estimates for the animal's numbers. Madhya Pradesh, for the second time in eight years, reported 785 tigers, or about a fifth of the national count. The State reported a 50% rise in tigers since the last census, a figure bettered only by Bihar which has less than 10% of M.P.'s tigers. While many factors contribute to the dynamics of the tigers present in a region, M.P. over the years has perfected the approach of actively moving both tigers, as well as their prey, within the State to balance predator and prey population.

In the last two decades, M.P. has reintroduced species such as barasingha (swamp deer) to new habitats such as Satpuda and Bandhavgarh, and the gaur to the Bandhavgarh and Sanjay-Dubri tiger reserves. Prey species such as chital (spotted deer) have been successfully supplemented in the Satpuda and Sanjay tiger reserves, Nauradehi, Kuno, and Gandhisagar wildlife sanctuaries through translocation from high-density Pench and Bandhavgarh. These often involve tracking, darting and capturing animals, keeping them in temporary enclosures until they reach sufficient numbers and then releasing them into their new habitat. Principles of ecology however insist that such relocation only be done within landscapes that are not too alien to the species, lest it be counter productive. However, recent amendments to the Forest Conservation Act give more leeway for large parcels of forest land to be diverted for industrial concerns. These would mean greater fragmentation within reserves and more dependence on the practice of moving prey around to maintain carnivore numbers. This approach, however, increasingly poses a conundrum to India's philosophy of conservation, which is to avoid creating fenced, segregated spaces and confine species to admittedly large but bounded tracts. India's conservation ethos, right from the conception of Project Tiger, was to restore the beast's numbers in a way that it could co-exist with humans. With the government finding it harder to maintain connected forest landscapes and ensure man and beast stay within their confines, expecting nature alone to restore the predator-prey balance is a fantasy. It is time that more States implemented active prey management policies. This will require drawing on scientific expertise and also support from people living in the vicinity of reserves. More importantly, this should prompt a move away from the approach of focusing on carnivore numbers to evaluating whether the habitat necessary to sustain these animals is being consistently improved.

THE MARCH OF THE MUDHOLS

It needs courage to enter the Canine Research and Information Centre at Thimmapur, near Mudhol, in Karnataka. A pack of Mudhol hounds bark fiercely at any unfamiliar face.

The Patwardhan Kings of Mudhol created the hybrid hunting dogs by crossing the Afghanistan Caravan hounds with the local native dog breeds. It is said that the King of Mudhol presented a pair of puppies to King George V in the early 1900s. The dogs came to be identified with the name of their town: later, it was bred in nearby regions.

The slim and sturdy Mudhol hounds are recognised as a native dog breed by the National Bureau of Animal Genetic Resources. The CRIC was set up in 2009-10 by the Karnataka Veterinary Animal and Fisheries Sciences University (KVAFSU), Bidar, to breed these dogs, which are in demand for surveillance and guard duties. They are also known for their loyalty.

The research centre supports breeders by supplying certified hounds. It has a buy-back system too. A distinct parental lineage certificate is also issued by the KVAFSU. The centre's scientists train local farmers who are interested in breeding these dogs.

Mudhol hounds come in seven colours. Night black is the rarest, followed by brindle, which is usually brown or tawny with bands of another colour. The centre provides 50-day-old puppies to breeders and enthusiasts for ₹12,500 each. The adult dogs are fed milk, eggs, cereals, millets and certified dog food at the centre. Puppies are fed milk and supplements, after they are weaned.

Nearly 240 farmers from the Scheduled communities have been given free pairs of dogs. Vaccines and food for the dogs are also provided for a year.

The Indian Army, the Air Force, the Remount Veterinary Corps, the Sashastra Seema Bal, the Central Reserve Police Force, the Central Industrial Security Force in Sriharikota, the Border Security Force, the administration of the Bandipur Tiger Reserve, the Karnataka Police, and the elite Special Protection Group use the services of the Mudhol hounds.

The research centre is hoping to expand its activities by introducing scientific training facilities with better infrastructure as the demand for the breed is only growing.

NEW FIND AT TAMIL NADU'S KEELADI: ARCHAEOLOGISTS DISCOVER CRYSTAL QUARTZ WEIGHING UNIT

Archaeologists working at Keeladi, a historic excavation site located 12 km southeast of Madurai in Tamil Nadu, have unearthed a crystal quartz weighing unit from the Sangam era. The weighing unit, found 175 cm beneath the ground, is the first of its kind since excavations began in Keeladi in 2014.

Unique in design, the crystal unit has a somewhat spherical shape.

An official statement from the state archaeology department said that the unit measures 2 cm in diameter,1.5 cm in height and weighs a mere 8 grams. In addition, archaeologists also found a terracotta hopscotch, an iron nail, black and red ware, and red slipped ware. Archaeologists also found an earthen snake figurine.

This discovery has stirred excitement among historians and archaeologists as weighing units in the past were primarily made of stones. Even as a detailed assessment on the findings is underway, an expert said they do not know the precise unit that the crystal was used to weigh.

"We can confirm that they were used for weighing purposes. Though we found stone-made weighing units earlier, these were not rock-made but made of minerals. These weighting units were not used for paddy or vegetables but for weighing high-value items such as gold, precious

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and semi-precious stones. Crystals or mineral materials are used as weighing units because they give accurate results and do not depend on the climate," said an expert with the state archaeological department.

The crystal quartz unit might have originated in the Kangayam area (near Coimbatore). "Even the Geological Survey of India (GSI) has evidence for this.There are also studies about the availability of crystal quartz in Karur region," a department expert said. Even as detailed studies are underway, experts estimate that the quartz is probably from a period between 600 BC to 2nd century AD.

Keeladi is currently witnessing the ninth phase of excavations launched by Chief Minister MK Stalin last April. Ongoing archaeological excavations in Keeladi and a few other sites in Tamil Nadu have extended the timeline of the Sangam Era from 300 BCE to 600 BCE. Multiple excavations in Tamil Nadu sites initiated by the state archaeology department have gained political significance in the light of long-running claims and disputes over Tamil civilisation or Dravidian legacy.

EXPRESS VIEW ON GUMMADI VITHAL RAO: THE PEOPLE'S SINGER

A balladeer, a bard, a Maoist, an Ambedkarite, an activist. Through his five-decade-long career, Gummadi Vithal Rao, popularly known as Gaddar, was all of these and more. The activist, who passed away at 77 in Hyderabad, was one of the most prominent faces of the Telangana statehood movement. A staunch believer in the power of people's movements, his songs such as "Aapuro rickshoda" and "Podustuna poddu meeda nadustuna kaalama, poru Telanganama" became protest anthems of the time.

Born into a Dalit family in Medak district's Toopran in what is now Telangana, Rao's initiation into Maoist politics and his transformation into Gaddar — "rebel" — had followed on the heels of systemic discrimination. As a teenager, he had been compelled to drop his surname by a school teacher who felt that he had no right to it. Caste was also why he was denied entry into the Yadadri temple, considered to be the state's equivalent of the temple in Tirupati.

In the Seventies, he joined the CPI-ML and set up its cultural wing Jana Nithya Mandali. Soon, his songs of freedom and revolution became harbingers of the change sweeping through the region. In the early Eighties, during the Telugu Desam Party's crackdown on Naxalism, he went underground, resurfacing in the 1990s, his popularity and feistiness intact despite an assassination attempt.

In 2010, four years before the formation of Telangana, Gaddar announced his rupture with Maoism, declaring himself an Ambedkarite. That decade would be his time of many firsts — the first time he wore a watch or experimented with Western attire; his first participation in the electoral process; expressions of his support for and dissent with various organisations. There was one thing that he remained committed to till the very end — his espousal of people's rights and his faith in grassroot movements. In his death, Telangana has truly lost its praja gayakudu (people's singer).

TOP BOARD

A year after causing a major stir at the Chess Olympiad, D. Gukesh is demanding attention yet again. The 17-year-old on Thursday, during the on-going Chess World Cup at the Azerbaijan capital of Baku, replaced Viswanathan Anand as India's No. 1 chess player in live rating. That has

happened only once before, and very fleetingly, during the last 37 years, when P. Harikrishna edged past the five-time World champion in March 2016. But Anand has never lost his India No. 1 rank in FIDE's rating list since July 1986, when he overtook Pravin Thipsay. Gukesh is now close to ending that unbelievable run, and it could happen in FIDE's next list, to be released in less than a month's time. That will be a significant achievement no doubt, and will boost Gukesh's confidence further, but what is more important is that he could be breaking into the world's top 10, which is an incredibly hard fortress to breach. Even more important is the fact that he could be doing it while he is still very much in his teens. A fortnight ago, he crossed another major milestone, when he touched 2750 Elo points.

As per the live rating on August 6, Gukesh is on 2756 points and is ranked World No. 9, one slot ahead of Anand (2754). India thus has two players in the World top 10. The only other Indian to be ranked inside the top 10 has been Harikrishna (in 2016). That Koneru Humpy is World No. 4 among women and Dronavalli Harika No. 12 also shows how far India has travelled on the chessboard from the time when it did not have a single Grandmaster until Anand. There is an even more telling bit of statistics: four of the world's top seven in the junior ranking list are Indians. Among the junior girls, there are two in the top 10. Gukesh's stunning feat will of course be an inspiration for India's young crop. Players such as Arjun Erigaisi, R. Praggnanandhaa and Nihal Sarin have also been making rapid progress on the international arena and are part of the golden generation of Indian chess. Gukesh is leading that exciting bunch of players, and within a few years, he could pose a serious challenge for the World title. With Anand as his mentor, he could be assured of the right guidance. And if the All India Chess Federation could finally come up with some elite tournaments at home for players like Gukesh, the game will grow even faster in the country.

EXPRESS VIEW ON TEAM INDIA'S WORLD CUP PROBLEMS: ELEVENTH HOUR BLUES

The start of the World Cup less than two months away, India's team finds itself in the unenviable position of not knowing its most competent 11, the composition of its middle order or the fitness level of key personnel returning from injuries. There is little excitement that marks the prelude to a World Cup. Of course, euphoria could kick in, the team could ride to glory in Ahmedabad on November 19.

For now, however, the problems that afflict Team India are visible in plain sight. The middle-order is shallow and unstable. It's unfathomable how a nation that brags about the depth of its sporting talent, has not discovered or groomed a reliable No 4 since the loss of form, a decade ago, of Yuvraj Singh. Those who have been identified as potential heirs have contrived to get injured. Like KL Rahul and Shreyas Iyer.

Call it a curse, or mismanagement of workload, or shoddy rehab, or myopic planning. Not just Rahul and Iyer, the most important block in the World Cup puzzle, fast bowler Jasprit Bumrah, too is returning from an injury-induced layoff. Can he immediately hit the straps and clock 90 miles per hour? Can Rahul and Iyer reclaim their groove? Can Rahul shoulder the responsibility of keeping and batting in the middle order? Unlike Rahul Dravid who juggled both in South Africa 2003, he has to keep on subcontinental tracks, where the ball spins more and keeps low.

There is little clarity, either, on the group of spinners — Ravindra Jadeja is the only certainty. The powers that be are still searching for the perfect eleven. Whether or not these players will be able to make up for lost time and pass the World Cup test in flying colours, is a difficult question. The journey could be thrilling, or heartbreaking.

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BUSINESS & ECONOMICS

WHAT IS FITCH'S DOWNGRADE OF U.S. ABOUT?

The story so far:

On August 1, rating agency Fitch downgraded the United States of America's (U.S.A.) rating to 'AA+' from 'AAA' — a rating that it had been holding at the agency since 1994. This was the first major downgrade for the country since Standard & Poor's (S&P) actions in 2011. Fitch argued the downgrade cumulatively reflected the expected fiscal deterioration over the next three years, "high and growing" general government debt burden and the "erosion of governance" in comparison to similarly rated peers over the last two decades.

What exactly is the downgrade?

Before moving to the downgrade, it is pertinent to note that rating agencies are institutions that assess the creditworthiness or financial capability of a region, country, its institutions or individual organisations. They assess its ability to meet future payment obligations — particularly important for those making investment decisions.

Fitch rates credit quality from 'AAA' (its highest rating) to 'D' (lowest rating). 'AAA' is assigned to entities with "exceptionally strong capacity for payment of financial commitments". The downgrade in discussion, that is 'AA', denotes "very low default risk", in other words, "very strong capacity for payment of financial commitments". Important to note, both reflect strong profiles — varying only on a comparative basis.

What were Fitch's concerns?

Fitch held that there has been a steady deterioration in standards of governance over the last 20 years, including on fiscal and debt matters. This is despite the bipartisan agreement reached in June for suspending the debt limit until January 2025. The agency observed that the "repeated debt-limit political standoffs and last-minute resolutions have eroded confidence in fiscal management."

The second of the observations relates to lacking a medium-term fiscal framework, unlike most peers, and having a complex budgeting process. The agency noted that these, combined with several economic shocks, tax cuts and new spending initiatives has led to successive increases in debt over the last decade.

Does this worry anyone?

Other than a knee-jerk reaction in the immediate aftermath, the development did not yield any significant consequence. At close on Friday, equities had recovered from a three-day losing streak with S&P BSE Sensex closing 480.57 points or 0.74% higher at 65,721.25. NSE closed 135.35 points or 0.70 per cent higher at 19,517.

The possibility of a longer and wide sell-off was always ruled out. Analysts held that even during a similar downgrade back in 2011, investors had come out largely unharmed, moreover, the agency was telling something which was already known.

CHINA'S DEFLATION; A CAUSE FOR CONCERN?

The story so far:

Consumer prices in China declined for the first time in over two years in July. The consumer price index declined 0.3% in July from a year earlier, leading to calls for steps to boost demand. Producer prices also dropped for the 10th consecutive month, contracting 4.4% in July. This is in contrast to the rest of the world where inflation has been the most pressing problem of late.

What is deflation?

Deflation is a term that is used these days to refer to a general fall in the prices of goods and services in an economy. The definition of deflation, however, has not always remained constant. In the past, the terms inflation and deflation were used to refer to a rise or a fall, respectively, in the money supply rather than a rise or fall in prices. A rise in the money supply was expected to contribute to higher prices in the wider economy while a fall in the money supply was believed to lead to lower prices.

Why is it a worry?

Many economists believe that deflation is a sign of falling demand for goods and services which could lead to a slowdown in economic growth. According to them, the demand for goods and services is the driver of economic growth. Falling prices, can also push buyers to postpone their purchases expecting lower prices in the future; this in turn can further dampen demand in the economy, they argue. A certain degree of inflation is believed to be necessary for the full utilisation of the resources in an economy. Further, it is said that deflation can lead to business losses and lower growth as costs remain sticky. It can also mess up credit contracts as borrowers will have to pay back lenders more in real terms. Hence, these economists recommend that the Chinese government and the Chinese central bank should take the necessary steps to boost demand in the economy.

Other economists point out that deflation per se may not be a problem. Many economies including the U.S. and China in the past, they note, have experienced deflation during times of rapid economic growth. Even a country like Japan, which has been plagued by persistent deflation for years, actually witnessed a rise in per capita real income levels during the era of deflation. Deflation in such cases is the result of a rise in the supply of goods and services that outpaces the rate of money supply growth. It should also be noted that it is not quite uncommon for countries experiencing high price inflation to suffer from low or even negative economic growth at the same time. However, deflation can also be a sign of economic turmoil. During times of economic crises, spending by individuals can drop temporarily as they become more cautious. Sometimes deflation in the official price indicators can also be a sign of a process of reallocation of resources. Spending on goods whose prices are captured by official indicators may drop while spending on other goods may even rise.

These economists also argue that deflation need not cause consumers to postpone purchases as widely believed. It is not the prices that determine consumer demand for goods and services, but it is rather consumer demand that determines prices. The direction of causation runs from consumer demand to prices rather than the reverse. Moreover, deflation need not cause sustained business losses since businesses can adjust what they pay for their inputs according to what their customers are willing to pay for their goods and services.

Why is China experiencing deflation?

China is experiencing deflation at a time when the People's Bank of China, or the Chinese central bank, continues to keep interest rates low to boost demand in the economy. This is in contrast to other central banks which have been tightening policy to fight high inflation after the Covid-19 pandemic. The likely reason behind Chinese deflation may not be the lack of liquidity but rather something more fundamental. A proper study of the Chinese money supply and monetary transmission can help us come to a definite conclusion on the reason behind the current bout of deflation. It should be noted that the Chinese economy has been experiencing turmoil even before the pandemic, in the property sector which contributes to a share of Chinese GDP. The Chinese policymakers have been trying to bring about a soft landing of their economy. Credit booms like the one witnessed in China can cause the misallocation of resources and the bust can involve a fall in broader prices.

RISKY RECOURSE

The latest decision by the RBI's Monetary Policy Committee (MPC) to leave its policy rate unchanged is a calculated risk taken by the rate setting panel, especially when viewed in light of the upward revision of its inflation forecast. Barely two months after projecting Consumer Price Index-based inflation to average 5.1% over the current fiscal year ending in March 2024, the MPC has raised its forecast for the annual average by 30 basis points to 5.4%. Conceding that a spike in tomato prices had contributed to a shock that had forced a revision in the headline inflation projection for the July-September quarter by a 'substantial' 100 basis points to 6.2%, RBI Governor Shaktikanta Das acknowledged that while the likely short-term nature of these shocks allowed for policymakers to look past a couple of high inflation prints, frequently recurring food price shocks risk destabilising inflation expectations. And while monetary authorities are right in laying the onus on the government for ensuring timely supply side interventions to 'limit the severity and duration of such shocks', a broader unmooring of price stability will undermine macroeconomic stability and growth. Underlining its commitment to aligning inflation to the target of 4% and keeping inflation expectations anchored, the MPC reiterated, by a majority, its policy stance of staying focused on the withdrawal of accommodation.

In a nod to the MPC's stance, the RBI, separately, temporarily imposed an incremental 10% increase in the cash reserve ratio banks must maintain, with a view to draining some of the surplus liquidity in the banking system that could spur prices. Mr. Das promised this increase would be reviewed on September 8 or earlier, to ensure adequate liquidity during the upcoming festival season. Still, given the MPC's sanguine outlook on economic growth, it has not only retained its forecast for the GDP to expand by 6.5% in real terms in 2023-24 but also stuck by its June projections for growth in each of the four quarters, the inflation shock notwithstanding. To be sure, the MPC has flagged several risks to the inflation outlook: the uneven rainfall distribution this year, the recent uptick in crude oil prices (the average price of the Indian basket has so far risen by 7% sequentially this quarter), and enterprises polled by the RBI expect output prices to harden. And while Mr. Das and his colleagues on the MPC have reaffirmed their readiness to take policy actions in order to align inflation to the target and ensure that inflation expectations remain well anchored, how quickly policymakers actually walk the talk and intercede in the coming months will determine their inflation-fighting mettle.

THAT '70S SHOW

Marking a sudden and sharp shift in India's foreign trade policy, the Commerce and Industry Ministry on August 3 notified restrictions on imports of laptops, personal computers (PCs), tablets and servers, making it compulsory for importers to secure a licence. The curbs were to kick in with immediate effect, rattling the entire supply chain (including shipments in transit) and igniting fears of shortages and price surges, especially ahead of the festive season. The government sought to suggest this was primarily driven by security concerns — imported devices could be used for surveillance, just as mobile phones could have spyware. It was also a rather blunt nudge for IT hardware producers to set up manufacturing bases in India by tapping a production-linked incentive scheme which has found few takers. But complex PC component value chains cannot crop up overnight, and concerns also flared up about how this may hit India's software and IT-enabled services export prowess. Sensing a backlash, the government went into damage control, deferring the curbs till November 1 and promising expeditious approvals to licence requests, while Ministers asserted this was not a return to the "Licence Raj" era.

Even if import licences will be issued in minutes, as indicated, the entire spectacle is a hark back to the early days of India's IT industry that was gradually freed up through the 1970s and 1980s, and industry players are likely to remain on edge till the licensing criteria become clear. Would importers need to justify imports of cutting-edge devices, or a software firm need to submit proof of new hires or fresh export orders to secure licences? If PC and tablet imports, which fell almost 28% in 2022-23 to $5.3 billion, are causing security fears because many come from China, the government can mandate testing norms to verify shipments. If the intent is to spur investments, it is difficult to bully global majors into committing large outlays at virtual gunpoint when they have other "easier to do business" alternatives around the world. Any increase in costs or limitations on device options would also imply collateral damage for India's consumers. For many households and small enterprises, this is not just about crossing the digital divide but also access to government services increasingly going online in a Digital India. Taken together with some recent policy ploys — such as the 28% GST on gaming bets, the freeze in prices of 'deregulated' petroleum products — this development makes for an ominous flashback for investors. Unpredictable policies, excessive taxation and a return to maximum government, can derail India's reform story.

IS INDIA'S SUGAR SURPLUS LEADING TO A CRISIS?

The story so far:

India became the world's top sugar producer in 2021-2022, surpassing Brazil with a record of 359 lakh tonnes. However, the extensive use of resources in sugar production is depleting rapidly, leading to a potential crisis in the future. Over-cultivation of sugarcane has caused a sugar surplus and high exports, impacting groundwater negatively. To prevent the risk of agricultural collapse, addressing groundwater overuse in the sugar industry is crucial.

Why is there excess sugar production?

India is the world's largest consumer of sugar, and thus has to produce enough to meet its huge domestic demand. But the excess production stems from policies and measures that make farmers favour sugarcane cultivation. The Central government offers a fair and remunerative price (FRP) scheme, which mandates a minimum price that sugar mills have to pay to sugarcane farmers, ensuring that farmers always get fair profits for their crop.

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State governments also offer heavy subsidies to incentivise sugarcane cultivation. Some have argued that this is done to win farmers' votes in politically important rural areas. The resulting sugar surplus has led to higher exports, with a record of 110 lakh tonnes exported in 2021-2022. In fact, Brazil, Australia, and Guatemala filed a complaint with the World Trade Organization (WTO) against India for violating international trade rules by offering excessive export subsidies and domestic support to farmers to outcompete other countries in the global sugar market. The WTO ruled against India and India also lost its appeal.

What efforts have been made to address this issue?

To deal with the sugar surplus, the Indian government considered diverting it to the production of ethanol, an organic compound made by fermenting sugarcane molasses or sugar. Ethanol is the active ingredient in alcoholic beverages and is also used in the chemicals and cosmetics industries. In the transport sector, the use of ethanol-blended petrol (EBP) significantly reduces harmful emissions, such as carbon monoxide and various hydrocarbons, from vehicles. The government launched the EBP programme in 2003 to reduce crude oil imports and curtail greenhouse gas emissions from petrol-based vehicles; it has been fairly successful. It started with the modest goal of achieving a blending rate of 5%, but the target set for 2025 is 20%. The government also reduced the Goods and Services Tax on ethanol from 18% to 5% in 2021. In the same year, of the 394 lakh tonnes of total sugar produced, about 350 lakh tonnes were diverted to produce ethanol, while India achieved a blending rate of 10% months ahead of the target.

How does excessive sugarcane cultivation impact groundwater?

India's EBP program reduced crude-oil imports, sugar exports, and greenhouse-gas emissions. However, sugarcane's water-intensive cultivation has taken a toll. Installing solar panels is suggested for better land use. Sugarcane requires 3,000 mm of rainfall, but top-growing States get 1,000-1,200 mm, relying heavily on groundwater from confined aquifers, a limited resource. 100 kg of sugar needs two lakh litres of groundwater for irrigation, raising concerns as these States are already drought-prone and groundwater-stressed, as per a 2022 CGWB report.

What are the solutions to this problem?

While the environmental implications of excess sugar production should be clear, surplus production and export have enormous financial gain, amounting to lakhs or crores of rupees a year. A better and more sustainable way would be to assess and then correct incentives that skew in favour of sugarcane over other crops, leading to a consistent surplus. Introducing fair and comprehensive subsidy schemes for a variety of crops can help farmers diversify as well as distribute cultivation evenly, prevent monocultures, and ensure an equitable income. The availability of a wider range of profitable and less resource-intensive crops can lower the strain on vital natural resources.

This must be complemented by environmentally responsible sugarcane cultivation practices that prioritise groundwater, such as drip irrigation, to tackle the issue in the long run. In drip irrigation, water is allowed to drip slowly but directly to the roots of sugarcane plants, reducing water consumption by up to 70% relative to the current flood irrigation method. This method has already been made mandatory in many parts of India, and the government has also offered subsidies to farmers for setting up the system. Next, India needs to invest in overall water-saving and management systems.

Concerted efforts to adopt cleaner practices such as rainwater harvesting, wastewater treatment, and canal irrigation networks, will help minimise stress on groundwater reservoirs as other water sources become available for irrigation. Although the CGWB conducts significant research and generates valuable data, many aspects of groundwater availability and distribution remain poorly understood and/or mapped. Investment in groundwater research, therefore, needs to be considered seriously.

As India continues to become more of a global frontrunner in the agricultural sector, it must put sustainability at the centre.

HOW THE MODI GOVT HAS COME FULL CIRCLE ON FARM LAWS

More than three years have passed since the Narendra Modi government enacted its three farm reform laws — first through ordinance in June and then Parliament in September 2020. It was billed as the "1991 moment" for Indian agriculture.

The laws basically freed the trade in agricultural produce: farmers had the choice to sell to anyone and anywhere in the country, with the trade area no longer confined to state government-regulated market yards or mandis. Traders, retailers, processors and exporters could also buy directly from farmers, including via contract cultivation and supply agreements. There would be no barriers to movement or limits on how much of produce they could purchase and stock.

Following protests by farmer unions — they viewed these as leading to the withdrawal of the state from minimum support price-based procurement operations — the reform laws were repealed in November 2021. They have ceased to exist in letter.

In spirit too

The last one year and more have seen even the spirit of the farm laws die. And it's been courtesy of not the unions, but the government itself.

In May 2022, the Modi government banned wheat exports. It also moved export of sugar from the "free" to the "restricted" category, while capping the total quantity that could be shipped out in a year. In September 2022, broken rice exports were prohibited, and a 20% duty imposed on shipments of other non-parboiled non-basmati varieties.

The wheat export ban continues, even as no sugar has been allowed to leave Indian shores after May this year. In July, it was decided to completely stop export of all non-parboiled non-basmati rice.

But it isn't external trade alone.

The Modi government, this June, clamped stock limits on tur (pigeon pea) and urad (black gram). No wholesaler or big chain retailer was permitted to hold more than 200 tonnes of either pulse, with these set at five tonnes for ordinary stores and 25% of annual installed capacity for dal millers.

Similar limits — contrary to the provisions in the Essential Commodities (Amendment) Act, one of the three now-repealed farm laws — were extended to wheat in the same month.

In short, the wheel has come full circle. From enacting legislation supposed to usher in liberalisation and structural transformation of Indian agriculture, it's back to controls.

The policy reversals cannot be attributed just to Rakesh Tikait, Joginder Singh Ugrahan and other union leaders. These have come from the government itself, as the overall supply situation in produce — including stocks of wheat, rice and sugar with the Food Corporation of India (FCI) and mills — has turned from surplus to finely balanced.

A historical parallel

Such policy flip-flops aren't new to India.

The oldest, and probably the most interesting one, dates back to 1947-48, when the country had just attained independence. It had to do with a short-lived experiment at decontrol of the foodgrains trade, the push for which came from none other than Mahatma Gandhi.

At a prayer meeting on December 8, 1947, Gandhi called for decontrol, so as to "make our life natural". Controls imposed from above "are always bad" and when they are lifted "people will have a feeling of freedom". Gandhi was essentially advocating dismantling of the system of food rationing, introduced during World War II, starting with Bombay in 1943 and extending to large parts of India over the next few years.

In August 1947, some 60 million people — a little under 18% of the population — were under direct rationing, getting 10 ounces (0.28 kg) of cereals per capita per day on an average. While below the originally envisaged one pound (16 ounces or 0.45kg) daily ration required to deliver 1,600 kcal of energy, the system had become physically, financially and administratively difficult to maintain.

India those days wasn't self-sufficient, forget surplus, in foodgrains. In 1944-45, it imported grain worth Rs 14 crore, rising to Rs 24 crore, Rs 89 crore and Rs 110 crore in the following three financial years. Apart from imports of around 2.3 million tonnes (mt), the government had to procure another 5.5 mt internally to meet the requirements of rationing during 1947.

These entailed both draining of foreign exchange and forced levy on farmers, which applied to any production in excess of, say, one tonne — the assumed yearly consumption of a family — and had to be delivered to the government. The compulsory levy was combined with controls over the private trade and movement, which ensured that prices stayed down and the grain remained in the producing areas for the government to skim off the surplus.

Not for nothing the then Finance Minister RK Shanmukham Chetty, in his 1947-48 Union Budget speech, warned of a "serious threat of a breakdown of [the] rationing system".

Decontrol and roll-back

In October 1947, a Foodgrains Policy Committee, having three leading industrialists (Purshotamdas Thakurdas, Ghanshyam Das Birla and Lala Shri Ram) among its members, recommended a reduction in India's dependence on food imports as well as cutting down on rationing.

The proposal was consistent with Gandhi's own philosophy of self-reliance. The government "must teach people how to face shortages" and work towards increasing domestic production. For that, it needed to keep in mind the interest of farmers. "The peasant [mostly] consumes what he grows. He sells his small surplus in order to buy the other necessities of life. One consequence of controls [is] that the peasant [realises] only a very low price from the market for his produce," he said.

With Gandhi lending his weight, Jawaharlal Nehru's government on December 10, 1947 announced a programme of "planned, gradual and progressive decontrol". States were told to reduce their rationing commitments in stages and rely on internal procurement rather than imports to meet any remaining needs. The Centre would import grain, but only to hold as an emergency reserve of 0.5-1 mt for market intervention. Price control at an all-India level would end.

The Agriculture Minister Rajendra Prasad (later President of India) anticipated decontrol to result in prices going up initially. But with higher and freer prices, the produce held back or hoarded by farmers and traders would come into the open. Prices would eventually "settle down to a reasonable level".

It didn't happen quite that way. Between November 1947 and July 1948 alone, wholesale prices of food articles soared by nearly a third. By September 1948, the government had to roll back India's first ever food decontrol experiment, which lasted all of nine months.

The lessons

The 1948 decontrol was attempted at a time when India could not produce enough food to feed a growing population. It was destined to fail, notwithstanding Mahatma Gandhi's exhortations "to make our life natural". The Nehru government tried again during 1952-54, when good crops emboldened it to relax movement controls and cut rationing. But towards the late 1950s — especially post the 1957 drought — it was realised that decontrol and free trade wasn't sustainable for a structurally food-deficit country.

Cut to 2020, when the farm laws were passed. These were advertised as giving farmers greater "freedom of choice" through opening up of alternative marketing channels for their produce. Unlike in 1948, India had now entered a regime of "permanent surpluses" in most crops, with the FCI's godowns bursting at the seams. The situation couldn't have been riper for decontrol.

Subsequent events have proved that decontrol and making "life natural" remain unrealised ambitions. When it comes to food and agriculture, even the most reformist governments tend to develop cold feet — reverting to controls at the slightest hint of shortages or price pressures. The Modi government has been no exception to the rule.

LIFE & SCIENCE

SUPERNOVAE – THE UNIVERSE'S ENGINES

Watching the night sky can bring a sense of peace and calm to a troubled soul, but beyond the vision of naked human eyes lies a universe bustling with activity. One particular violent source of bustle – and indeed a cosmic engine that drives the evolution of new stars and planets – is the supernova. A supernova happens when a particularly massive star has exhausted fuel to fuse and blows up.

A star is a delicate balance between two forces: the outward energy and pressure created by nuclear fusion and the implosive tug of gravity, the result of the star's large mass. When a star can no longer fuse the nuclei of an element and release more energy than required to fuse them, gravity starts to gain the upper hand. The star will soon collapse in a brief amount of time, causing its outer shells to explode. This is a core-collapse supernova.

Another type of supernova occurs when two stars – one or both of which are white dwarfs – orbiting each other collide or one of the white dwarfs absorbs enough matter from the other star. Either way, the result is a thermal runaway supernova.

A supernova expels large amounts of energy, radiation, and elements into the space around it. The heavy metals found in earth's crust – including the gold that we prize and the uranium that we use in nuclear reactors – were first created in the crucible of some supernova aeons ago.

WILL A NUCLEAR-POWERED ROCKET CUT TRAVEL TIME TO MARS BY HALF?

In less than three years, NASA could be testing a nuclear rocket in space.

The space agency and the Defense Advanced Research Projects Agency, or DARPA, announced on Wednesday (August 2) that Lockheed Martin had been selected to design, build and test a propulsion system that could one day speed astronauts on a trip to Mars.

BWX Technologies, based in Lynchburg, Virginia, will build the nuclear fission reactor at the heart of the engine. The $499 million program is named DRACO, short for the Demonstration Rocket for Agile Cislunar Operations.

A Number That Sums It Up: 3 to 4 months to Mars

What if a spacecraft could get to Mars in half the time it currently takes?

Every 26 months or so, Mars and Earth are close enough for a shorter journey between the worlds. But even then it is a pretty long trip, lasting seven to nine months. For most of the time, the spacecraft is just coasting through space.

But if the spacecraft could continue accelerating through the first half of the journey and then start slowing down again, the travel time could be slashed. Current rocket engines, which typically rely on the combustion of a fuel like hydrogen or methane with oxygen, are not efficient enough to accomplish that; there is not enough room in the spacecraft to carry that much propellant.

But nuclear reactions, generating energy from the splitting of uranium atoms, are much more efficient.

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The DRACO engine would consist of a nuclear reactor that would heat hydrogen from a chilly minus 420 degrees Fahrenheit to a toasty 4,400 degrees, with the hot gas shooting from a nozzle to generate thrust. Greater fuel efficiency could speed up journeys to Mars, reducing the amount of time astronauts spend exposed to the treacherous environment of deep space.

Nuclear propulsion could also have uses closer to home, which is why DARPA is investing in the project. The technology may allow rapid maneuvers of military satellites in orbit around Earth.

Background: Back to the future

Nuclear propulsion for space is not a new idea. In the 1950s and 1960s, Project Orion — financed by NASA, the Air Force and the Advanced Research Projects Agency — contemplated using the explosions of atomic bombs to accelerate spacecraft.

At the same time, NASA and other agencies also undertook Project Rover and Project NERVA, efforts that aimed to develop nuclear-thermal engines similar in concept to those now being pursued by the DRACO program. A series of 23 reactors were built and tested, but none were ever launched to space. Until the end of this program in 1973, NASA had contemplated using nuclear reactors to propel space probes to Jupiter, Saturn and beyond, as well as to provide power at a lunar base.

"The technical capabilities, including early safety protocols, remain viable today," Tabitha Dodson, the DRACO project manager, said in a news briefing on Wednesday.

A key difference between NERVA and DRACO is that NERVA used weapons-grade uranium for its reactors, while DRACO will use a less-enriched form of uranium. The reactor would not be turned on until it reached space, part of the precautions to minimize the possibility of a radioactive accident on Earth.

"DRACO has already done all of our preliminary analyses across the entire spectrum of possibilities for accidents and found that we're all the way down in the low probability and all the way down in the teeny tiny amount of release," Dodson said.

What Happens Next: A test flight in orbit

The DRACO development is to culminate with a flight test of the nuclear-thermal engine. Kirk Shireman, a vice president at Lockheed Martin, said the launch was currently scheduled for late 2025 or early 2026.

The demonstration spacecraft would most likely orbit at an altitude between 435 and 1,240 miles, Dodson said. That is high enough to ensure that it stays in orbit for more than 300 years, or long enough for radioactive elements in the reactor fuel to decay to safe levels, she said.

HOW TO TELL IF A MATERIAL IS A SUPERCONDUCTOR

In the last week of July, researchers in South Korea said they had discovered that a material called LK-99 is a room-temperature superconductor. Scientists have been looking for such materials for several decades now for their ability to transport heavy currents without any loss – a property that could revolutionise a variety of industrial and medical applications.

Independent researchers will have to check whether LK-99 is really a room-temperature superconductor before it is accepted as legitimate. When a material becomes a superconductor,

the superconducting state will induce four changes in the material. Spot all four and you have yourself a superconductor.

1: Electronic effect – The material will transport an electric current with zero resistance. This is hard to check when the sample of the material is very small, and requires sophisticated equipment.

2: Magnetic effect – A type I superconductor (a material that, in the right conditions, becomes a superconductor throughout its bulk) will expel a magnetic field from its body as long as the field strength is below a critical value. This is the Meissner effect: a magnet placed near the material will be pushed away as the material transitions to a superconducting state. A type II superconductor – which transitions through a mix of superconducting and non-superconducting states en route to becoming fully superconducting – won't expel magnetic fields but will prevent them from moving through its bulk. This phenomenon is called flux pinning. When a flux-pinned superconductor is taken away from a particular part of the magnetic field and put back in, it will snap back to its original relative position.

3: Thermodynamic effect – The electronic specific heat changes drastically at the superconducting transition temperature. The specific heat is the heat required to increase the temperature of the electrons in the material by 1 degree Celsius. As the material transitions to its superconducting state, the electronic specific heat drops. Upon warming the material back up to the critical temperature (below which the material is a superconductor), it jumps back to the value it was when the material was not superconducting.

4: Spectroscopic effect – The electrons in the material are forbidden from attaining certain energy levels, even if they could when the material wasn't a superconductor. When scientists create a map of all possible energy levels in a superconductor, they should see this as a 'gap'.

This article is about the two types of conventional superconductors – which are materials whose abilities can be explained using the Bardeen-Cooper-Schrieffer theory of superconductivity. Scientists also know of many unconventional superconductors, but the origin of superconductivity in these materials remains a mystery.
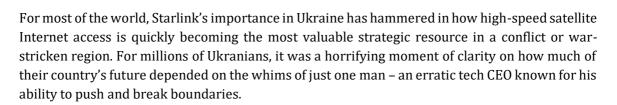
MUSK'S STARLINK: WHY THE NEW SOVEREIGN OF LOW-EARTH ORBIT IS BAD NEWS?

In January 2023, Telegram channels in Russia were flooded with undated pictures of an unmanned Ukranian drone that included a retrofitted Starlink satellite dish made by SpaceX, Elon Musk's rocket company.

The images, a pro-Russian paramilitary group claimed, showed that the dish's rear plastic casing had been hacked off to reduce its weight and make it easier to fit on the drone. On paper, the integration of Starlink's satellite internet service meant that the machine could be controlled from anywhere and be used for everything from surveilling Russian troops to coordinating military strikes.

Eleven days later, responding to a video of a Russian TV anchor calling him a war criminal, Musk tweeted: "We are not allowing Starlink to be used for long-range drone strikes…". And just like that, the world was informed that a billionaire sitting 10,000 km away had effectively changed the rules of engagement for the Russia-Ukraine war.

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For most of the world, Starlink's importance in Ukraine has hammered in how high-speed satellite Internet access is quickly becoming the most valuable strategic resource in a conflict or war-stricken region. For millions of Ukranians, it was a horrifying moment of clarity on how much of their country's future depended on the whims of just one man – an erratic tech CEO known for his ability to push and break boundaries.

The importance of Starlink

For most of the last three decades, satellite internet ranked pretty high on the list of possible, but largely impractical, technology – somewhere between jetpacks and hover cars. The idea was simple: the governments or companies would send up small satellites into space that would beam high-speed Internet to users with the help of ground stations or terminals back on earth.

In the 1990s and 2000s, most of the companies that sent up such satellites ended up failing, either due to high costs or technical difficulties. It didn't help that the actual product at the time was bad and that the business opportunity was limited.

A lot of this changed from 2019, in large part due to Musk. Better satellites, placed closer to earth, and in a connected constellation could bring satellite internet access on par with the average broadband experience.

Today, Musk's Starlink service is the undisputed king of the section of space called low-earth orbit (LEO).

Of the roughly 7,500 active satellites that orbit Earth today, more than half are Starlink satellites.

There are a handful of competitors, some backed by governments: Viasat, OneWeb, Avanti, SES, Immarsat, and Iridium. But none of them come close to offering the convenience, speed or affordability of Starlink.

Remote control

After the Russia-Ukraine war broke out in 2022, fibre network lines and cell towers were the first pieces of infrastructure to be destroyed, rendering Starlink as the lifeblood of Ukraine's communication network. It also made them beholden to Musk's mercurial personality.

When Internet connectivity is deployed in a region, the nature of the technology is such that its operations aren't controlled by the user, but by the company. So when the Ukrainian government wanted to switch on/off access in a particular area – for example, if a piece of territory had fallen into Russian hands and a few Starlink dishes or terminals had been lost – it had to call up Starlink each and every time. Imagine an Ukrainian army officer needing connectivity, only to find out that it's 4 am in California and his contact at SpaceX won't wake up for another three hours.

Musk could argue that he doesn't want to give up control but the flipside is that he can also choose to turn the service off whenever he wishes. This is why Taiwan, in desperate need of a back-up in the event China snaps its undersea cables, suggested Starlink operate in its country through a joint venture that would have a local company own 51% of the entity. Musk refused, and talks petered out.

"If I'm China, I would ask Elon Musk to control all the satellite receivers in Taiwan. If I can control him, in an emergency I can turn it off," Herming Chiueh, Taiwan's deputy minister of digital affairs, later told Bloomberg.

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It's not as if a Starlink deployment can't be customised to give any government greater control over how the service works.

Media reports indicate that in June 2023, the Pentagon approved a new deal to buy 500 new Starlink terminals for Ukraine that would reduce the company's ability to interfere in operations.

Warping how the internet works

Traditional infrastructure works on a public-utility principle. Toll-road operators don't get to decide who uses their roads. Similarly, telecom companies don't get to decide whether a particular region deserves no internet access because its inhabitants might use it for unsavoury purposes. Yet satellite internet companies get to insert themselves in key debates because of how the technology works and the lack of regulation.

After the September 2022 protests in Iran, the government shut off internet access in large parts of the country. Musk quickly stepped in to turn on Starlink connectivity. Activists and protestors smuggled in satellite dishes, and to date over 100 Starlink terminals are active in Iran, although the government there has declared it illegal. Short of shooting down Starlink's satellites, Iran's government can't do anything.

There aren't many that would oppose giving non-violent and democratic protestors the right to safely communicate. But it's when the other side of the penny drops that the problem of Starlink's monopoly becomes clear.

The New York Times reports that Musk refused Ukraine's request in 2022 to provide Starlink connectivity near Crimea. The Ukrainian army wanted to send an explosive-filled maritime drone into Russian ships. It was only months later that Musk said that he wouldn't allow Starlink to be used for long-range drone strikes.

SpaceX president Gwynne Shotwell, who serves as Musk's lieutenant, went a step further and took Ukraine to task over their use of the satellite internet technology, saying the country had leveraged it in ways that were "not part of any agreement".

Starlink sits outside the realm of a typical government-to-government defence deal, yet these decisions get to be taken not by a government accountable to its citizens but a handful of tech company employees.

A satellite race

The obvious solution is that we need more LEO satellite constellations – government, private or some combination of the two – that provide Internet access.

Starlink's monopoly was the result of many factors. Admittedly, Musk's foresight is one; extremely light regulation from the Federal Communications Commission is another.

The secret sauce though is that SpaceX's partly reusable rockets give Starlink a non-stop elevator to get satellites into LEO in a relatively inexpensive manner. This is where its serious competitors trip up.

Rival firm OneWeb, whose biggest shareholders are Bharti Airtel's holding company and the U.K. government, were forced to abort a launch in Russia after Putin demanded the satellites not be

used against Moscow. OneWeb took a $230 million hit after Russia refused to return its satellites too.

This is why more government-specific projects are needed.

In 2022, the European Union earmarked EUR 2.4 billion to set up a "sovereign" satellite constellation to be rolled out by 2027. China has its own plans to deploy a 13,000-satellite LEO mega constellation to rival Starlink.

Starlink's disputes with Ukraine and other countries should serve as a wake-up call of how the power of the stars is quickly being concentrated in the hands of just one man, and a worrying lesson for any country or government looking to depend on Musk for connectivity.

IS THE CURRENT CLIMATE SUBSTANTIALLY WARMER THAN DURING THE MEDIEVAL PERIOD?

An analysis of tree-ring records from Fennoscandia, a region in northern Europe, from the past 1,170 years suggests that the current climate may be substantially warmer than during the medieval period, contrary to previous research. Large uncertainties persist in climate models, prior to AD 1400. Tree-rings can be used to reflect climate change over many centuries and track the amplitude of climate extremes. There is currently a discrepancy between tree-ring data and climate models during the medieval climate. To provide a precise record of the past climate between AD 850 and 2019 in Fennoscandia, researchers analysed 1,170 years of tree ring data, based on around 50 million wood cell measurements from 188 living and dead Scots pine trees. The authors found that the Fennoscandian climate is substantially warmer today than during the medieval period, supporting the argument that anthropogenic climate change is increasing temperatures in this region.

EVOLUTION NOT AGAINST SAME-SEX BEHAVIOUR IN MONKEYS: STUDY

Same-sex sexual behaviour in animals is considered a 'Darwinian paradox': if reproduction is critical to evolution, then non-reproductive behaviour should have ceased, but a study has found that rhesus macaque males' same-sex sexual behaviour has not compromised opportunities to evolve

In 1896, controversy broke out when French entomologist Henri Gadeau de Kerville published the first sketch of two male cockchafers, a species of scarab beetles, copulating.

More than a century later, in 2012, researchers at the Tring Natural History Museum in the U.K. rediscovered a four-page pamphlet originally published in 1915 by the English naturalist George Levick. It seems Levick had observed same-sex sexual behaviour (SSB) in Adélie penguins.

Since then, scientists have reported it in pigeons, swans, albatrosses, lions, dolphins, bats, elephants, bonobos, gorillas, monkeys, lizards, tortoises, dragonflies, fruit flies, and bed bugs.

Animals that engage in SSB have been considered a 'Darwinian paradox': if reproduction is critical to evolution, then SSB – which is non-reproductive – should have ceased to exist. The supposed paradox is also fed by a longstanding belief among biologists that SSB could be evolutionarily "costly" to species because it leads to fewer offspring, thus reducing the chances of evolution mediated by natural selection.

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Now, in a study published in July in Nature Ecology & Evolution, researchers at the Imperial College London have challenged the premise of this paradox. The team, led by postdoctoral fellow Jackson Clive, has reported that at least in rhesus macaques, male SSB is remarkably common and "is not [evolutionarily] costly".

Volker Sommer, a professor of evolutionary anthropology at University College London, said the study is the first to find evidence that SSB has a "heritable component" in the case of animals. He wasn't involved in the study.

Island of the monkeys

For their study, Dr. Clive and his team observed rhesus macaques, a common monkey model, in Cayo Santiago, an island east of Puerto Rico.

In 1938, researchers from Columbia University and the University of Puerto Rico shipped hundreds of monkeys from India to the island to establish a "disease-free breeding colony of monkeys in order to provide animals for research on tropical diseases."

Today, the island is home to more than 1,700 descendants of the original population. The monkeys are surveyed every day. Every year, researchers study babies to determine their paternal and maternal lineages.

For Dr. Clive & co., the island offered a large population of free-ranging monkeys as well as comprehensive data to answer their question: is SSB heritable?

The heritability question

For three years, the researchers documented the frequency of same-sex and different-sex mounting by rhesus monkeys under observation. Mounting, according to a 2021 paper, is "sexual behaviour without a reproductive function", making it an apt "sociosexual behaviour".

Dr. Clive's team observed 236 male macaques and found that "72% … engaged in same-sex mounting, in comparison with 46% for different-sex mounting," says their paper.

Having discovered the high frequency of SSB in their study population, the authors turned their attention to its heritability – an idea mired in controversy.

In 1993, American geneticist Dean Hamer found that the human X-chromosome has a region whose transmission through the members of a family corresponded to "same-sex orientation" of male individuals in that family. Dr. Hamer concluded that "at least one subtype of male sexual orientation is genetically influenced."

But then another study, published in 2019 in Science, examined more than half a million human genomes and found that while five "spots" in the genome were potentially related to same-sex behaviour, none of them had the power to predict one's sexuality.

AN IMMORTAL CELL LINE AND REPARATION, 70 YEARS LATER

If much of the debate in health care is about equity, in a sense practically every innovation in biological care has been based on a con job, a steal. The biggest strike to rectify decades of wrong came last week, when biotech company Thermo Fisher Scientific came to an agreement with the

family of Henrietta Lacks, whose cancer cells were removed from her without her permission when under treatment in a hospital in Maryland.

These cells went on to become an immortalised cell line called HeLa (for Henrietta Lacks) used in scientific research. It is reportedly the most commonly used cell line across the world, and yet neither the patient, a 31- year old poor, African American woman nor her family were acknowledged or compensated for the contribution. The cells were taken from the patient when she was under treatment for cervical cancer. That wrong was righted last week.

Cell culture is the process by which cells are grown in a petridish, in a lab in controlled conditions, outside of their natural environment. These cells are used in critical and path breaking scientific research to develop drugs, vaccines (polio), study the effects of radiation, how pathogens affect humans, gene mapping and the list could go on. Usually cells cultured in the lab from human cells could be kept alive for only a few days,s ubject to the phenomenon of cellular senescence, or the cessation of cell division. However, all that changed when Henrietta Lacks appeared on the firmament of cell biology with a bunch of cells that behaved like nothing scientists had ever seen before, allowing them to create an 'immortalised cell line'.

Animmortalised cell line is a population of cells which would normally not proliferate indefinitely but, due to mutations, have achieved the ability to keep on dividing, never reaching the point of senescence. Johns Hopkins biologist George Otto Gey was initially foxed by the fact that Henrietta's cells were behaving differently when dunked in a culture medium and stirred in a roller drum - they were constantly multiplying and did not require a glass surface to grow. It was observed that the cells doubled every 20–24 hours unlike previous specimens that died out. He realised their potential and went on to turn this into what would probably count among modern science's greatest tools - a widely shared immortalised cell line. It is said that in the 1960s, HeLa cells that were taken on space missions to study the effects of space travel on living cells and tissue, divided even more quickly in zero gravity.

It is averred that Lacks' cervical cancer provided the mutation that was required for her cells to evade normal cell death. HeLa cells were the first human cells to be successfully cloned in 1953 by Theodore Puckand Philip I. Marcusat the University of Colorado, Denver, and since then, HeLa cells have "continually been used for research."

There is no doubt she contributed unknowingly perhaps to several scientific discoveries, cures for maladies and vaccines, but Lacks herself did not survive, her permission was not sought to take her cells (as was common at that time), and she died tragically at the young age of 31. She might have been consigned to mortal transience, ironically despite her uniquely immortal cells and the benefit they conferred to the human race. But for Rebecca Skloot, who as a young girl heard of Henrietta Lacks and her cell line from a tutor and was intrigued that she had never heard of her before, despite her seminal contribution to science. Skloot never lost interest, but went on to, as an adult write a fascinating story: The Immortal Life of Henrietta Lacks, in 2010, to shine a light on the truth, in an attempt to not only tell the world about what actually happened, but also seek justice for the family.

" There's no way of knowing exactly how many of Henrietta's cells are alive today. One scientist estimates that if you could pile all HeLA cells ever grown on to a scale, they'd weight more than 50 million metric tons - an inconceivable number, given that individual cell weighs almost nothing," writes Skloot. In comparison, there was literally nothing in the public sphere about Henrietta Lacks until Skloot went digging.

Henrietta Lacks was born as Loretta Pleasant in Roanoke, Virginia, on August 1, 1920, the 9th child of Eliza and Johnny Pleasant. Her mother died four years later in childbirth, and her father moved with his 10 children to Clover, Virginia, where he sent them off to relatives to live. Henrietta went to her grandfather who was incidentally raising another cousin David Day who she went on to marry. The Days then moved to Maryland, after he found a job in a steel factory.

Skloot records that before her fifth pregnancy, Henrietta had unusual bleeding, and a lump developed on her cervix, after the birth. Reluctantly, she decided it was time to go the hospital. At the gynaecology department at Johns Hopkins Hospital, a biopsy revealed the cervical tumour that had been hitherto missed, though she had been under care during the birth and post-natal period too.

Henrietta went on to undergo radiotherapy to the cervix. It was then that the surgeon extracted two small tissue samples: one from the tumour and the other from healthy tissue nearby. Notably, we learn from the book that Henrietta herself was unaware that any sample had been taken. Consent of the patients, particularly of African American descent, at that time was not even considered. The more notorious violation was the Tuskegee Syphillus Study - for unethical experimentation on African American patients in rural America. Meanwhile, Lacks' children continued to be eviscerated by poverty.

It was after the book was published that the timeline sets itself on a path of correction. The National Institutes of Health , in the US reportedly set up a panel with Lacks family members to review requests to conduct further research on HeLa cells. This was the first time that the family felt included in their grand matriarch's contribution to the world. As Nature went on to record in an article after the announcement of compensation last week: The cells have been instrumental in at least three Nobel-prizewinning discoveries, but Lacks's family was not compensated for those uses.

Nature further recorded that in the wake of protests over racial justice in 2020, the Howard Hughes Medical Institute (HHMI) in Chevy Chase, Maryland, announced a six-figure gift to the Henrietta Lacks Foundation, founded by Skloot to provide assistance to individuals and family members who have been affected by non-consensual medical studies.

Thermo Fisher Scientific's settlement with the Lacks family is a gesture from the users themselves. Thermo Fisher in Waltham, Massachusetts, sells products derived from the cells. While the details of the settlement are still not in the public domain, one thing is certain: It will give the Lacks family agency over how the cells are used. Reparation has been made, in a sense, but there is hope because, in this, is the acknowledgement of the wrongs of the past, and a desire to render justice, even if seven decades later.

WHO REPORT ON TOBACCO CONTROL: KEY FINDINGS, HOW INDIA FARES

Bengaluru finds special mention in a World Health Organisation (WHO) report on tobacco control measures released Monday.

Hundreds of enforcement drives, putting up 'No Smoking' signs, and creating awareness about the effects of smoking and second-hand smoke resulted in a 27% reduction in smoking in public places in the city, the report said.

Across the world, there are 300 million fewer smokers today, with the prevalence of smoking declining from 22.8% in 2007 to 17% in 2021.

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Fifteen years ago, WHO had developed the MPOWER measures – monitor tobacco use and prevention policies; protect people from tobacco smoke; offer help to quit tobacco; warn about dangers of tobacco; enforce bans on tobacco advertising; and raise taxes on tobacco products. The report assesses the implementation of these measures.

What does the report say?

In the 15 years since the MPOWER measures were first introduced, 5.6 billion people in the world – or 71% of the entire population – remain protected by at least one of the measures. This has increased from just 5% of the population in 2008.

The number of countries implementing at least one MPOWER measure has increased from 44 countries in 2008 to 151 in 2022, according to the report. At least four countries – Brazil, Turkiye, Netherlands, and Mauritius – have implemented all the measures.

"WHO urges all countries to put in place all of the MPOWER measures at best-practice level to fight the tobacco epidemic, which kills 8.7 million people globally, and push back against the tobacco and nicotine industries, who lobby against these public health measures," said Dr Ruediger Krech, WHO, Director for Health Promotion.

With a focus on second-hand smoking, the report says that almost 40% countries now have completely smoke-free indoor public spaces.

The report has some bad news as well.

There are at least 44 countries in the world that still do not implement any MPOWER measure. There are 53 countries that do not completely ban smoking in healthcare facilities. And only half of the countries have smoke-free workplaces and restaurants.

The director general of WHO, Dr Tedros Adhanom Ghebreyesus, also flagged the dangers of e-cigarettes. In the report, he said, "But progress so far is being undermined by the tobacco industry's aggressive promotion of E-cigarettes as a safer alternative to cigarettes. Young people, including those who never previously smoked, are a particular target. In fact, E-cigarettes are harmful to both the people using them and those around them, especially when used indoors."

Why is it important to curb second-hand smoke?

The report focuses on controlling second-hand smoking (being in the presence of someone who is smoking) by creating smoke-free public areas and also de-normalising the act of smoking in society.

Of the estimated 8.7 million tobacco-related deaths each year, 1.3 million are of non-smokers exposed to second-hand smoke, the report says quoting the Global Burden of Disease 2019. Second-hand smoke has been linked to almost 400,000 deaths due to heart disease, over 250,000 deaths due to chronic obstructive pulmonary disease, over 150,000 deaths due to stroke and lower respiratory disease each, and over 100,000 deaths due to diabetes.

The report also adds that severe asthma, respiratory tract infections, and sudden infant death syndrome are more common among children exposed to second-hand smoke. Around 51,000 deaths in children and adolescents under the age of 20 years is linked to exposure to second-hand smoke.

How does India fare?

When it comes to India, the report states that the country has the highest level of achievement when it comes to putting health warning labels on tobacco products and providing tobacco dependence treatment.

With 85% of cigarette packs carrying health warnings both on the front and back, India figures among the top 10 countries in terms of the size of health warnings. The cigarette packets in the country also carry a toll-free number for a quit-line.

India has also banned the sale of e-cigarettes, and banned smoking in healthcare facilities and educational institutions. The report ranks the implementation of these bans an 8 out of 10 in healthcare facilities, 6 in schools, and 5 in universities.

What do experts say?

One of the biggest steps in the works is implementing warnings on OTT platform content when actors are seen using tobacco products. "This would make India the first country in the world to do so. And it is needed. During the pandemic, there was a huge increase in the number of people subscribing to OTT platforms. This content is also readily available to children, which means the warnings have to reach them too," said Binoy Mathew, an expert in tobacco regulation from the Voluntary Health Association of India.

He said India already has a comprehensive law on tobacco control, but some amendments are needed in the 20-year-old legislation. "There is a need to ban the loose sale of cigarettes. Many people, especially college students, buy one or two cigarettes instead of the whole pack that might cost Rs350-400. This means they are not exposed to the health warning and quit-line at all."

EXPRESS VIEW ON LANCET TB STUDY: FOOD FOR CURE

Undernutrition has, for long, been recognised as the leading risk factor for tuberculosis. The link between diet and the disease is also borne out by the public health history of Europe and North America — TB cases fell drastically when people started eating well following improvements in living conditions in the 20th century. In India, modelling studies have suggested that addressing undernutrition could reduce cases by over 70 per cent in vulnerable states. Now a study published in the medical journal Lancet shows that a good diet not only reduces the incidence of the disease amongst vulnerable people living with infected people, but it also reduced mortality in TB patients. Conducted in Jharkhand, the study found that early weight gain in people with this bacterial disease lowers the risk of mortality by 60 per cent. The findings have significant policy implications for the TB elimination programme of the country that has the highest burden of the disease in the world — according to government data, more than 4.5 lakh died of consumption in 2020.

TB, and its medication, often reduce appetite. Fever increases the rate at which calories are expended — and in severe cases, the disease causes "wasting" or low weight-for-height. A recovered patient with a poor diet has a serious chance of a relapse. The National Tuberculosis Elimination Programme (NTEP) recognises the need to improve nutrition. The Nikshay Poshan Yojana gives Rs 500 a month to those diagnosed with TB. By all accounts, this is paltry. The NTEP guidelines recommend that a tuberculosis patient consume 2,800 calories every day. The severe form of the disease can often incapacitate a patient for long periods and result in livelihood losses and financial strain to families. Experts reason that eliminating TB requires improving the living

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conditions of patients and their families. Nikshay Poshan is a half-hearted attempt at addressing one of the root causes of the problem. The scheme has also been dogged by systemic challenges. A 2020 study in the Indian Journal of Tuberculosis reported that healthcare providers complained of a lack of training and complex reporting formats as the main hurdles in the implementation of the scheme. Low patient awareness has also affected the nutritional programme's reach.

The government has plans to eliminate TB by 2025. The target has been seen as too ambitious by experts. The Lancet study offers important cues. It also underlines the need to make sure that people have a healthy diet of proteins, carbohydrates and micro-nutrients. Policymakers must take note of the study.

NOW, YOUR X-RAYS CAN HELP YOU DIAGNOSE DIABETES EARLY

Could a chest X-ray that you got in the emergency room be used to predict your risk of developing diabetes? Some US researchers think so. They developed an artificial intelligence model based on more than 2.7 lakh chest X-rays taken between 2010 and 2021. When it was tested on another set of 15,000 X-rays, they found that it could flag an increased risk of diabetes, either predicting future diabetes or ensuring early diagnosis in many who wouldn't necessarily have undergone regular screening tests.

The AI model looked at the location of fatty tissues to determine the risk of diabetes. Fatty tissue is known to be linked with insulin resistance, leading to diabetes. While a blood sugar test would still be required to confirm diabetes, the researchers found that the red flagging by AI tools could help people get their diagnosis years before they otherwise would have. Diagnosing diabetes early gives clinicians a window of opportunity to help patients maintain their blood glucose levels through lifestyle modification and medicines, thereby reducing risk of complications like heart diseases, kidney disease, diabetic foot, and stroke among others.

This will especially be of help in identifying cases among Indians because of their thin-fat body type, the researchers found. One of the primary markers for diabetes screening internationally is obesity determined by the body mass index (BMI). While this could be a good measure of population level obesity, when it comes to India, this measure runs into a problem. Many Indians with BMI lower than 25 — those considered not to be overweight — might still have a lot of fat around the abdomen, putting them at a higher risk of diabetes.

The researchers actually found that among obese individuals, the AI model was actually better at predicting the risk of diabetes than the current screening guidelines in the US, which say that overweight or obese people between the ages of 35 and 70 years should be screened for diabetes. Not only are Indians thin fat, but they also tend to get diabetes at an early age. So, many would miss diagnosis if these guidelines were followed. Luckily, in India, doctors are aware of this phenomenon and screen for diabetes beginning at 25 years and with BMI two points lower than the internationally accepted levels. Dr Mithal adds, "For a person with a strong family history of diabetes and obesity, I would start screening at the age of even 20 years. This is because we do see a lot of diabetes in the younger population," said Mithal.

The finding is important seeing that India is the diabetes capital of the world. A recently completed study funded by the Indian Council of Medical Research pegs the number of people living with diabetes in India at 101 million. The study says that an additional 136 million are in the pre-diabetes category and may soon become diabetic, putting a huge strain on the country's healthcare system.