

CURRENT AFFAIRS for UPSC

14TH TO 20TH AUGUST 2022



INTERNATIONAL

THE POWER OF WORDS

Salman Rushdie has lived in the shadow of a death threat since 1989, after his fourth novel, *The Satanic Verses* (1988), led Iran's Ayatollah Ruhollah Khomeini to issue a fatwa against the writer for offending Islam, the Prophet and the Koran. The extraterritorial edict multiplied the danger to the writer, and though the motive is still unknown, last Friday, Rushdie, 75, was stabbed multiple times at a literary function in New York. He is off the ventilator, but, according to his son, remains in critical condition. Through the years, others have faced violence over the novel too. People have died in riots, blasts, firing to protest against the book; his Japanese, Norwegian and Italian translators were targeted; a bomb killed the person who was trying to set it off. Rushdie went into hiding for nine years, where he burnished his weapon of choice — words. He has talked the language of truth, upheld freedoms of art and the intellect and pushed for ideals of democracy such as the right to dissent in his 14 novels, and in several incisive essays. In fact, under cover, assuming the nom de guerre Joseph Anton (inspired by the wanderer in Conrad, and the melancholy of Chekov; also the title of his 2012 memoir), he penned *Haroun and the Sea of Stories*, a book he had promised to write for his nine-year-old son.

For his Booker Prize-winning *Midnight's Children* (1981), which reimagined India's independence, he had dispensed with safety nets, just like his literary inspirations, Gabriel Garcia Marquez, Gunter Grass and Nadine Gordimer. Rushdie found a new language to write about "hot and overcrowded and vulgar and loud" India, shining a light for future writers such as Arundhati Roy. The assault on Rushdie is also an attack against voices who speak out against extremism. Far too many writers, from M.M. Kalburgi, Gauri Lankesh to Anna Politkovskaya, have faced violence, some paying with their lives, for agitating people in a "culture of easy offendedness". On the frontline, Rushdie has been acutely alive to the expanding threat. "This new idea," he writes in an essay titled 'Courage' (Languages of Truth), "that writers, scholars and artists who stand against orthodoxy or bigotry are to blame for upsetting people is spreading fast, even to countries like India that once prided themselves on their freedoms." Speak up, he says, every little bit counts. Rushdie's next novel, *Victory City*, a translation of an epic, and a book about the "power and the hubris of those in power", is out next February. But before the long recovery, a spot of cheer from the hospital: his son says Rushdie is being his usual feisty and defiant self, and that his sense of humour is intact.

HOW FIGHTING IN UKRAINE HAS PUT AN ACTIVE NUCLEAR PLANT AT GRAVE RISK

Howitzers Sunday started shelling on the Ukrainian town of Nikopol from the side of Russia-occupied Zaporizhzhia nuclear plant, The New York Times reported. The shelling resumed as Ukraine's President Volodymyr Zelenskyy warned in a video address Saturday that Russian soldiers using the nuclear plant site as a base to launch attacks will become a special target for "our special services, for our army". Experts have repeatedly raised an alarm over the plant being in an active combat zone. The International Atomic Energy Agency has underlined that the current situation poses a grave risk of a nuclear catastrophe.

The site

Located in southern Ukraine on the banks of Kakhovka reservoir on the Dnipro river, Zaporizhzhia Nuclear Plant is Europe's largest, and 10th biggest in the world. Before the war started, it produced half of Ukraine's power with a total capacity of 5,700 MW. The plant has six reactors

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



with a capacity of 950 MW each. However, only three reactors are currently active. Geographically, the plant is located 200-km from Russia-annexed Crimea, and 500-odd km from Ukraine's capital Kyiv.

Russian capture

Russia captured the plant site in early March and continues to control it. As of now, the plant is run by Ukrainian staff, and 'guarded' by Russian troops.

Kyiv, according to Associated Press, has been planning a counteroffensive to recapture Zaporizhzhia and neighbouring Kherson provinces. However, Ukrainian forces controlling the area on the opposite bank from the nuclear plant have repeatedly faced Russian artillery fire from the other side.

Active threat

Moscow has been accused of using the nuclear plant as a shield to fire rockets to target Ukrainian positions. Russia, on the other hand, blames Ukraine for shelling near the plant. The threat of a nuclear disaster remains real with the plant housing active reactors and stored nuclear waste.

While engineers, according to The NYT, believe that reinforced concrete containment structures protect the reactors from even direct hits, there is concern that a fire sparked by the shelling can trigger a nuclear accident.

In a report, Al Jazeera said that more than a reactor core explosion, experts are worried about damage to systems that cool spent fuel pool and the reactors. The report added that in case of a disaster, a radiation release could hit any part of Europe due to the plant's location.

Global alarm

UN Secretary General Antonio Guterres has warned that the situation could "lead to disaster". The IAEA has been seeking access to the plant for a while now, and utmost restraint. Amid demands to turn the area into a demilitarized zone, the G7 group of nations have called on Russia to immediately exit the plant and hand its control back to Ukraine.

THE CONFLICT OVER NAGORNO-KARABAKH

The story so far: The conflict between Armenia and Azerbaijan over Nagorno-Karabakh has been at the centre of three major wars and multiple clashes for decades. The recent flare-up began on August 3 after Azerbaijan claimed that it had captured the territory in Karabakh in a retaliatory campaign, after an Armenian attack killed one Azerbaijani soldier.

What happened?

The Nagorno-Karabakh conflict remains stalemated despite the several ceasefire agreements reached in the past. Both Baku and Yerevan claim absolute historic ownership of the region which is located within the boundaries of Azerbaijan but is populated largely by ethnic Armenians.

Following Azerbaijan's announcement of capturing Karabakh, the military in Nagorno-Karabakh disputed the claim and accused Azerbaijan of killing two soldiers, declaring a "partial mobilisation" in response to the clash. Armenia has called on the international community to help stop Azerbaijan's "aggressive actions" claiming that it continues its "policy of terror" against the



population of Nagorno-Karabakh. Russia has also accused Azerbaijan of breaking the ceasefire agreement of 2020 and claimed that it was “taking measures to stabilise the situation” with Armenian and Azerbaijani representatives.

What does the 2020 agreement say?

The nine-point agreement of November 10, 2020 was signed by Armenian Prime Minister Nikol Pashinyan, Azerbaijani President Ilham Aliyev, and Russian President Vladimir Putin. The agreement imposed an immediate ceasefire, a timeline for withdrawal from Azerbaijan’s occupied regions, the introduction of Russian peacekeepers, and the need for new transport corridors. However, this failed to initiate a peace agreement because it altered the power balance between the two countries and lacked clarity on several issues resulting in the subsequent ceasefire violations on both sides.

WHY A STABLE KENYA IS IN THE INTEREST OF AFRICA AND THE WORLD

The Kenyan presidential election of August 9 has thrown up interesting results. Despite receiving the support of incumbent President Uhuru Kenyatta and leading in opinion polls, the veteran Raila Odinga lost narrowly to Deputy President William Ruto, 55. This was the fifth presidential election defeat for Odinga, the 77-year-old politician from the populous Luo tribe.

Kenyatta, the leader of the dominant Kikuyu people of central Kenya, chose to back Odinga, who had contested against him in 2017, over his deputy Ruto. The electoral support that Ruto, who faced a new coalition, received, split the Kikuyu people down the middle.

Ruto’s narrow victory met the ‘50 per cent plus 1’ rule of Kenya’s elections, obviating the need for a runoff. As of now, Ruto is expected to be sworn into office on August 30.

Post-election concerns

Odinga has rejected the result as “null and void”, and is expected to appeal in the Supreme Court. Four of the seven election commissioners have dissociated themselves from the result. Kenya, which has a history of post-election violence, is on tenterhooks — hoping that the matter would be settled in court rather than on the streets.

In 2007, rioting and strikes followed the announcement that Odinga had lost to Mwai Kibaki. In 2017, police used deadly force against opposition supporters protesting the victory of Kenyatta.

To keep his country together will be Ruto’s first challenge. Africa, and the world as a whole, could do without a meltdown in Kenya. The country is in transition, with a different tribal and class coalition, and new kinds of engagement. Expectations are high among younger citizens of Africa’s sixth largest economy — but Kenya’s debt is 67% of its GDP, and the country received a 38-month, \$2.34 billion IMF finance package in April 2021.

Two, under Kenyatta, Kenya pursued a close economic partnership with China while aligning itself strategically with the United States, which included criticising Russia. Both the Chinese and Russians are expected to aggressively woo Kenyatta’s successor. As a member of the 23-nation Indian Ocean Rim Association (IORA), Kenya is a strategically important player in the Indian Ocean region.

Four, Kenya is the economic locomotive of the region, involved in 45% of the trade within the East African Community (EAC). It was instrumental in expanding the EAC just before Kenyatta gave up



chairmanship in July — the community admitted the Democratic Republic of the Congo (DRC), the largest country in central Africa. This took the EAC to the port of Matadi on the Congo river in the DRC, and established the vision of a cross-continent link between the Indian and Atlantic Oceans.

This move may have, however, alienated the DRC's small but influential neighbour Rwanda, and its long-serving President Paul Kagame, who are at loggerheads with Kinshasa. Kenyatta had led the effort to station an EAC peacekeeping force in eastern DRC — without him, and with Burundi as Chair of the EAC, the future of this initiative is uncertain. Ruto is junior to the other tall leaders of the region such as Kagame, Yoweri Museveni of Uganda, and Salva Kiir of South Sudan.

THE GEOPOLITICS OF THE FOURTH TAIWAN CRISIS

Mao wanted to be the leader who achieved “national reunification”. But he knew that it was practically impossible for the People's Liberation Army (PLA), which did not even have a proper navy in the early 1950s, to cross the Taiwan Strait and retake the island. Besides this, U.S. President Harry S. Truman's decision to send the U.S. Navy's Seventh Fleet to the Strait had created a buffer between the communist-ruled mainland and Kuomintang-held Taiwan. What he could do was to shell the Kinmen and Matsu islands, in 1954 and then in 1958, triggering the First and Second Taiwan Strait Crises. However, taking the island by force remained a distant dream.

By the time China started building military capacities (including a nuclear bomb), the geopolitical dynamics of the region had begun shifting. In the 1970s, faced with the Soviet problem, China's focus shifted to bettering its ties with the U.S. and, later, on its own economic development. The Taiwan issue was put on the back-burner without making compromises on the goal of unification. The issue would resurface in 1995 when Taiwanese President Lee Teng-hui visited Cornell University in the U.S. China started military drills and missile tests in the Strait, triggering the Third Strait Crisis. But U.S. President Bill Clinton responded by sending U.S. aircraft carriers to the Strait, eventually forcing Beijing to de-escalate. For China, it was another crude reminder of the gap between its objectives and actual strength.

New normal

Over the past 27 years, the regional situation has changed dramatically. If the Soviet Union brought China and the U.S. closer in the second half of the Cold War, the successor state of the Soviet Union, the Russian Federation, today, is not only one of China's closest partners but also a power that militarily challenges the U.S.-led post-Cold War security architecture in Europe. If Mr. Clinton had confidently sent aircraft carriers to the Taiwan Strait in response to China's drills in the 1990s, U.S. President Joe Biden would not dare do that today without factoring in the possibility of a military conflict with the world's largest Navy. The sharpest manifestation of these changes was the Fourth Taiwan Strait Crisis, unleashed by China's response to Ms. Pelosi's recent visit to the island.

Mr. Biden has repeatedly said in recent months that the U.S. would come to Taiwan's defence if attacked. Every time Mr. Biden made the remark, the White House issued a statement explaining that the U.S.'s policy of strategic ambiguity (being ambiguous on the question of whether the U.S. would come to Taiwan's defence) had not changed. But Mr. Biden's repeated statements suggest that U.S. policy is becoming less and less ambiguous than certain. Against this already tense background, China viewed a visit by an American leader (who is second in the line of succession to the presidency) to an island which it sees as a breakaway province as a clear act of provocation.



For China, “the ghost” has been incrementally violating the status quo. And it responded by establishing a new normal. Its warships and jets breached the median line of the Taiwan Strait, rendering it meaningless. The drills were held in the territorial waters and airspace claimed by Taiwan. China’s missiles flew over the island. As Taiwan’s Foreign Minister Joseph Wu put it, “China has openly declared its ownership of the Taiwan Strait.”

China sees Taiwan as the last vestige of its “century of humiliation” that began with its defeat in the first Opium War (1839-42). And the Chinese Communist Party (CCP) wants the island back for historical, political and geopolitical reasons. Historically, the Party sees Taiwan as always a part of China. It was a part of imperial China before it became a Japanese colony in 1895. When Japan was defeated in the Second World War, Taiwan was returned to the nationalist Republic of China, ruled by the Kuomintang. Chiang Kai-shek and his Kuomintang supporters fled to Taiwan in 1949 after they lost the civil war to the communists in the mainland. Since then, Taiwan has remained a self-ruled island, while “national reunification” has stayed one of the most important promises and objectives of the CCP.

Politically, no Chinese leader, not even Xi Jinping who is arguably the most powerful leader since Mao, can compromise on the Taiwan question without damaging their authority, career and legacy. On the contrary, Mr. Xi, who is expected to get an unusual third term in the 20th Party Congress later this year, would like to go down in history as a leader who achieved what even Mao could not do.

On hegemony

Geopolitically, Taiwan is critical for China’s great power ambition. No country can become a global superpower without establishing regional hegemony. The U.S. is protected by the world’s two largest oceans — the Atlantic Ocean and the Pacific Ocean — and has successfully established hegemony in the Western Hemisphere. The Soviet Union had enjoyed hegemony in the Black Sea and the Baltic Sea. On the contrary, China, despite its military capabilities, is a caged naval power in a crowded neighbourhood. And if it loses Taiwan for good, which is just 180 kilometres from its mainland, China’s attempts to establish regional hegemony would be complicated further. So, it would like control of the island not only to fulfil a historical promise (political benefits for the leader or, as many have pointed out, taking control of the global semiconductor supplies), but also to shore up its geopolitical stature as a great power in the western Pacific. The question is whether China thinks the time has come to take risks to meet its objectives.

This does not mean that military action would be easy for China. Taiwan has been outside its control since 1949. Even if China takes Taiwan, keeping it under its thumb would be challenging, given the island’s topography and nationalist groups. And there is no geographical contiguity from the mainland to Taiwan, which could continue to pose security challenges. Moreover, any strategic miscalculation would prove counterproductive to China’s standing in the region, like what has happened with misadventurous peak powers in the past. But the counter-arguments are also equally persuasive.

China thinks the strategic environment around Taiwan has shifted to its favour, with a window of opportunity to make the move as the U.S. is caught in a triangular entanglement — its failures in the Muslim world, its desire to defeat Russia in Europe and a strategy to contain China’s rise in the Indo Pacific. Once the structures of the new Cold War are in place and Taiwan emerges as a front line, it would be as difficult for China to get the island back as it was for the German or Korean



unification under the communists. This is what is making the Fourth Taiwan Strait Crisis the most dangerous one.

INDIA GIFTS DORNIER AIRCRAFT TO SRI LANKA

India on Monday handed over a Dornier aircraft to Sri Lanka in the presence of President Ranil Wickremesinghe, reaffirming its security ties with the island nation.

Last week, Sri Lanka Air Force announced that the Indian Air force was gifting it a Dornier 228 Maritime Patrol Aircraft, while noting another aircraft would be donated within two years. The Indian gift was in response to a request from the Sri Lankan government in 2018 for two Dornier Reconnaissance Aircraft to enhance the maritime surveillance capabilities of the island nation, the Sri Lanka Air Force said.

Sri Lanka is a member of the 'Colombo Security Conclave', that began as a trilateral initiative involving India, Sri Lanka and the Maldives, and later included Mauritius, for maritime cooperation in the region.

THE CONTROVERSIAL VISIT OF A CHINESE VESSEL TO HAMBANTOTA

The story so far: On August 13, Sri Lanka approved the arrival of a Chinese satellite-tracking vessel to its southern Chinese-funded Hambantota port. It was the second approval from the island nation's Ministry of Foreign Affairs, after it first cleared the visit on July 12. In the weeks in between, India raised concerns over the ship's visit with President Ranil Wickremesinghe, and officially commented on it, while Indian media splashed headlines of a "Chinese spy ship" hovering in the Indian Ocean. Caught in a delicate diplomatic and geopolitical spot, Colombo gave its nod after "extensive consultations" with "all parties".

What is the vessel?

Yuan Wang 5 was described by the Sri Lankan government as a "scientific research ship". The BRISL (Belt & Road Initiative Sri Lanka), a Colombo-based organisation studying China's ambitious connectivity project, was the first to draw attention to the visit in a Twitter post late July. It said that the Yuan Wang 5 will conduct "satellite control and research tracking in the north-western part of the Indian Ocean Region" through August and September. Vessels of the Yuan Wang class are said to be used for tracking and supporting satellite as well as intercontinental ballistic missiles by the People's Liberation Army Strategic Support Force.

How have different countries reacted?

India has expressed its concern over the Chinese vessel visit. The spokesperson of the Ministry of External Affairs commented twice on the issue. Addressing the weekly media conference in New Delhi, the official initially stated that India "carefully monitors any development having a bearing on its security and economic interests" and later said that they were "rejecting insinuations" that Sri Lanka was "pressured". After India raised the matter with President Ranil Wickremesinghe, External Affairs Minister S. Jaishankar took it up with his Sri Lankan counterpart Ali Sabry on the side-lines of the recent ASEAN summit in Cambodia. In a similar bilateral meeting in Phnom Penh, U. S. Secretary of State Antony Blinken too raised the issue with Mr. Sabry, The Hindu reliably learned from official sources in Colombo.



At the same forum, Mr. Sabry reportedly discussed the matter with Chinese Foreign Minister Wang Yi, sources said. An official statement said the Sri Lankan Foreign Minister firmly backed the 'One China Policy' that President Wickremesinghe earlier endorsed. The developments showed that Colombo was caught between the U.S. and India on the one hand, and China on the other. That too at a time when the Sri Lankan government is counting on all their support as the island nation, hit by a devastating economic crisis, embarks on debt restructuring ahead of a promised International Monetary Fund (IMF) package.

How did China respond?

China reacted strongly after Sri Lanka, following concerns voiced by India, requested China to defer the visit of the vessel "in light of the need for further consultations". Chinese Foreign Ministry spokesperson Wang Wenbin said, "I have noted relevant reports and would like to stress two points. First, Sri Lanka is a transportation hub in the Indian Ocean. Scientific research vessels from various countries including China have made port calls in Sri Lanka for replenishment. China always exercises freedom of the high seas in accordance with the law and fully respects coastal countries' jurisdiction over scientific research activities in waters under their jurisdiction. Second, Sri Lanka is a sovereign country. It has the right to develop relations with other countries based on its development interests. To have normal cooperation is the independent choice made by our two countries. It serves the shared interests of both sides and does not target any third party." Without directly referring to India, he added that it was "completely unjustified for certain countries to cite the so-called 'security concerns' to pressure Sri Lanka."

What is Sri Lanka's stand?

Sri Lanka's Foreign Affairs Ministry said: "having considered all material in place, on 13 August 2022 the clearance to the Embassy of the People's Republic of China was conveyed for the deferred arrival of the vessel from 16-22 August 2022." The announcement meant that the controversial vessel visit, earlier scheduled for August 11, was effectively postponed by five days, while its week-long duration remained as was earlier planned.

The developments were "in light of certain concerns raised with the Ministry", it said, without naming India in its statement. Sri Lanka's popular weekend newspaper Sunday Times reported that the U.S. and Indian envoys were asked to provide "concrete reasons" for their objections. "Not satisfied with the reasons being sufficient to refuse entry to the Chinese vessel, the Government decided to inform the Chinese embassy in Colombo to inform the ship to continue its journey to Hambantota," a news report published on August 14 said.



NATION

INDIA, CHINA TROOPS TO TAKE PART IN RUSSIA WAR GAMES IN VOSTOK

Indian and Chinese troops are set to take part in military exercises in Russia later this month, the first such major war games to be hosted by Russia since its invasion of Ukraine in February.

China's Defence Ministry in Beijing on Wednesday in a statement announced the participation of People's Liberation Army (PLA) troops in the exercises, adding that "India, Belarus, Tajikistan, Mongolia and other countries will also participate".

India has also indicated its participation in the war games.

There was no response from the Indian Army on Wednesday to questions on India's participation.

Russia's Defence Ministry said last month the Vostok (East) 2022 exercises will be held from August 30 to September 5 in 13 training grounds in Russia's Eastern Military District, and that the manoeuvres would include units of airborne troops, long-range bombers and military cargo aircraft.

It remains unclear if Indian and Chinese troops will be present together or if they will take part in different drills which will be spread across the 13 different training grounds.

Deepening cooperation

The Chinese Defence Ministry statement noted the exercises were "unrelated to the current international and regional situation" and were aimed at "deepening the pragmatic and friendly cooperation with the militaries of participating countries, enhancing the level of strategic coordination of all participating parties, and enhancing the ability to deal with various security threats".

Indian and Chinese troops have remained in a stand-off that has lasted for more than two years along the Line of Actual Control (LAC) in Eastern Ladakh following the transgressions by the PLA in April 2020.

Disengagement has taken place in some areas along the LAC but talks to restore the status quo in the remaining friction areas in Hot Springs, Demchok and Depsang have been slow-moving.

COLLEGIUM LED BY CJI RAMANA CLEARED OVER 250 FOR HCS; VACANCIES NOW LOWEST SINCE 2016

The Supreme Court collegium led by Justice N V Ramana as Chief Justice of India (CJI) made more than 250 recommendations for high court judge appointments, helping bring vacancies down to their lowest level since 2016.

According to data from the Ministry of Law and Justice, there are 380 vacancies against the sanctioned strength of 1,108 judges in 25 high courts as of August 1.

The average vacancy since January 2016 has been 418 judges. The highest vacancy level in this time was 478 in August 2016.



Justice Ramana, who took charge in April 2021, will demit office on August 26. Justice Uday Umesh Lalit will take charge as CJI the following day.

During CJI Ramana's tenure, the collegium also made 11 judge recommendations for the Supreme Court. The five-member collegium ended a 22-month deadlock, making nine recommendations to the top court at once in August 2021.

The list included, for the first time, three women — Justices Hima Kohli, B V Nagarathna and Bela Trivedi. Justice Nagarathna is in line to be the first woman CJI in 2027.

The collegium led by Justice Ramana's predecessor, CJI S A Bobde, made 109 high court judge recommendations in his 17-month tenure. Justice Bobde, who was CJI from November 18, 2019 to April 23, 2021, retired without making a Supreme Court single judge recommendation.

The CJI Ranjan Gogoi-led collegium (his tenure was from October 3, 2018 to November 17, 2019) made 130 recommendations for the high courts and 14 for the Supreme Court.

CJI Ramana's tenure also saw the most appointments being cleared by the government. While the government appointed 266 judges to the high courts in Justice Ramana's time as CJI, only 104 appointments were made when Justice Bobde was CJI and 107 when Justice Gogoi held the post.

The government Sunday appointed 11 additional judges to the Punjab and Haryana High Court.

A three-member collegium makes recommendations for judge appointments to high courts and a five-member collegium makes recommendations for the Supreme Court. The CJI Ramana-led collegium for high court appointments comprised Justices Lalit (CJI-designate) and A M Khanwilkar, who retired on July 29. The next collegium headed by Justice Lalit will also include Justices D Y Chandrachud and Sanjay Kishan Kaul.

The Supreme Court's strength will be at 30 when CJI Ramana retires on August 26. Three more judges, Justices Lalit, Indira Banerjee and Hemant Gupta, are expected to retire this year.

REMARKS BY A SESSIONS JUDGE IN KERALA IN A SEXUAL HARASSMENT CASE ARE AN EMBARRASSMENT FOR HIS INSTITUTION

Justice, it is said, is blind. Not, it would seem, for S Krishna Kumar, a sessions judge in Kerala, for whom the dress worn by the complainant provided sufficient legal ground to make comments offensive and disrespectful to women in a sexual harassment case. He made these observations while granting bail to social activist and Malayalam writer Civic Chandran in two separate cases, revealing, in the process, a crude misogyny that is shocking in the institution of the judiciary, in a state that takes great pride in giving women their rightful place across sectors, at home and in the workplace.

The airing of a strikingly regressive mindset seemed to come together with an undue haste that ignored the Supreme Court's direction reiterated in several judgements – cautioning lower court judges against making unwarranted observations on the merits of a case while hearing bail pleas. In the first bail order on August 2, Judge Kumar said that provisions of the SC/ST (Prevention of Atrocities) Act, 1989 would not prima facie stand against the accused because it is "highly unbelievable that he will touch the body of the victim fully knowing that she is a member of Scheduled Caste". In the second bail order on August 12, he described the photographs of the complainant presented by the defence counsel as "sexually provocative" and went on to observe



that “Section 354 will not prima facie stand against the accused”. He also drew a comparison between the physical attributes of the complainant and the accused to make the bizarre claim that the assault alleged by the former could not have taken place in the first case.

The SC/ST (Prevention of Atrocities) Act and Section 354 of the IPC, which pertains to sexual harassment crimes, were legislated after extended campaigns and intense debate. Judge Kumar’s comments show that there are still corners and pockets that are not yet touched, or changed, by the effort to make the law more sensitive and justice more responsive to the concerns and dignity of women. That these remarks have come from a judicial officer in a state that has done well on most gender indices, especially on health and education, is also disturbing. The much-discussed Kerala Model of development owes a lot to the empowerment of its women — socially, politically and economically – evident in movements in the 19th century, to claim agency over their bodies, and by the setting up of producer and services networks such as the Kudumbasree in recent times. These gains seem to have fallen woefully short in changing mindsets.

REMISSION WITHOUT REFORM

The release of 11 convicts sentenced to life for the heinous murder of seven people and the gang-rape of three women during the Gujarat communal pogrom of 2002 is a questionable decision by the State. On the face of it, it also appears to be illegal, as their terms seem to have been remitted without the required consultation with the Union government. It defies logic that those convicted for direct involvement in the rape of three women, the murder of a three-year-old and six others can be considered candidates for premature release under any remission policy. One of the convicts had obtained an order from the Supreme Court in May, under which Gujarat, the State in which the crime occurred, was held to be the appropriate government to consider his premature release. The Court had asked the State to decide the application under its 1992 remission policy, as it was the relevant one on the date of conviction in 2008. However, it is difficult to treat this as a waiver of the requirement under Section 435 of the Code of Criminal Procedure, which makes consultation with the Centre mandatory. Further, a Constitution Bench, in 2015, held that ‘consultation’ meant ‘concurrence’ in this provision. The remission also runs contrary to the spirit of contemporary thinking on treating crimes against women and children, especially rape combined with murder, as so heinous that the perpetrators should not be considered for remission. It is not clear if the committee that recommended remission had considered the disquieting effect the release of these prisoners might have on the survivors and other members of the affected community.

A life sentence normally means that a convict has to spend the natural life in prison. The Cr.P.C. does permit premature release in the form of remission or commutation, but it should be based on a legal and constitutional scheme, and not on a ruler’s whimsy. The power of remission has been conferred on the Union and State governments — apart from the sovereign power of clemency enjoyed by the President and Governors — so that it can be used to temper the law’s rigours with an element of grace. While the benefit of remission ought not to be denied to anyone without a ray of hope that they will be free one day, it is a power to be exercised with discretion and wisdom. Further, any decision on remission should be linked to the convict’s expression of regret and some promise of reform. It would be unjustified if given for political considerations merely because of elapse of the minimum number of years they have to serve. With an Assembly election due in Gujarat at the end of the year, it is difficult not to read political significance into this decision. The sight of the released convicts being greeted and feted on their release will not sit easy on the country’s conscience.



WHAT IS ATAGS, THE INDIGENOUS HOWITZER USED IN INDEPENDENCE DAY 21-GUN SALUTE?

In a first, an indigenously developed howitzer gun, ATAG, became part of the 21-gun salute during the Independence Day ceremony at the Red Fort Monday. Developed by the DRDO, the Advanced Towed Artillery Gun System (ATAGS) was used alongside the traditional British-origin '25 Pounders' artillery guns.

Prime Minister Narendra Modi also referred to the gun while speaking about the Atmanirbhar Bharat initiative of the Centre during his Independence Day speech. "Today, for the first time in 75 years since Independence, a Made-in-India artillery gun was used in the 21-gun salute that is given to the tricolour. All Indians will be inspired and empowered by this sound. And that is why, today, I want to thank our Armed forces for carrying the responsibility of Atmanirbharta on their shoulders in an organized manner," the PM said.

The 21-gun salute tradition

When the National Anthem is played by the Military Band after the unfurling of the Tricolour at the Red Fort by the Prime Minister, a 21-volley gun salute is fired by a ceremonial battery from an artillery regiment.

The tradition of gun salutes originates from the Western navies where guns from the ports and those from incoming ships used to be fired in a particular manner to convey that there was no belligerent intention. This tradition was carried forward as a way of paying respects or for according official welcome to the Crown, royals, military commanders and heads of states. India inherited the tradition from the British rulers who had gun salutes comprising 101 volleys, 31 volleys and 21 volleys, and so on depending on the hierarchy. In India, artillery gun salutes are fired on the Republic Day, the Independence Day and also at the time of oath taking ceremony of the President, among other occasions.

Over the years, this 21-gun salute — which are blanks — was fired by the World War era howitzers of British make known as 'Ordnance Quick Fire 25 Pounder' or just '25 Pounder'.

Inclusion of ATAGS

This year, two Advanced Towed Artillery Gun System (ATAGS) howitzers joined the battery that fired along with other 25 Pounders, officials have said.

The ATAGS is an indigenous 155 mm x 52 calibre howitzer gun developed by the Defence Research and Development Organisation (DRDO) with its Pune-based facility Armament Research and Development Establishment (ARDE) being the nodal agency.

Howitzers is an umbrella term for a category of long-range artillery guns.

Some practice firing sessions of the ATAGS were held in the run up to the Independence Day celebrations. Officials said that including the ATAGS in the symbolic activity of 21-gun salute is a crucial step in the journey and is significant towards its induction into the Army.

Development of the ATAGS

The ATAGS project was started in 2013 by DRDO to replace older guns in service in the Indian Army with a modern 155 mm artillery gun. With ARDE as the nodal laboratory, other DRDO



facilities that joined the development efforts are Instruments Research and Development Establishment (IRDE), Vehicle Research and Development Establishment (VRDE), Proof and Experimental Establishment (PXE), Centre for Artificial Intelligence and Robotics (CAIR), and Defence Electronics Applications Laboratory (DEAL). The ARDE has collaborated with Bharat Forge Limited and Tata Advanced Systems Ltd for the manufacturing of this specialised gun system.

After the several tests of the subsystems in the initial phases of development, July 2016 marked a key milestone when the proof-firing of ATAGS was conducted during the technical trials at DRDO's Proof and Experimental Establishment (PXE) in Balasore.

In August and September 2017, a record target range of around 48 km was achieved at Pokhran Field Firing Range.

The development process of ATAGS by the DRDO coincides with development of Howitzer Dhanush for Advanced Weapons and Equipment India of the erstwhile Ordnance Factory Board.

In 2019, the Army and the Ministry of Defence gave bulk production clearance to produce 114 Dhanush. Officials hope that the two flagship products under Make In India — ATAGS and Dhanush — will successfully replace the older systems from the artillery in coming days.

ALL ABOUT F-INSAS, NIPUN MINES, LCA — THE NEW DEFENCE SYSTEMS HANDED OVER TO ARMY

A day after a made-in-India howitzer gun, the ATAGS, was used for the first time in the ceremonial 21-gun salute during the Independence Day celebrations, Defence Minister Rajnath Singh Tuesday handed over several new defence systems, including the F-INSAS, the Nipun mines, the Landing Craft Assault (LCA), to the Army.

What is the F-INSAS system?

F-INSAS stands for Future Infantry Soldier As A System, a programme for infantry modernisation aimed at increasing the operational capability of the soldier. As part of the project, soldiers are being equipped with modern systems that are lightweight, all-weather-all-terrain, cost-effective and low maintenance.

The full-gear of the F-INSAS system includes an AK-203 assault rifle, which is a Russian-origin gas-operated, magazine-fed, select-fire assault rifle. It has a range of 300 metre, and is being made at Korwa near Amethi in a Russia-India joint venture. A contract for over six lakh AK-203 rifles was signed in December last year between the Ministry of Defence and the Indo-Russian Rifles Private Limited (IRRPL).

On the weaponry front, other than the AK-203, the F-INSAS includes a multi-mode hand grenade, which can be used in defensive and offensive modes.

In defensive mode, the grenades are to be hurled when the thrower is in a shelter or has a cover, while the target is in the open and can be harmed by fragmentation. In the offensive mode, the grenades do not fragment and the adversary is harmed by the blast or is stunned. The weapon kit also has a multi-purpose knife for close quarters combat.

Apart from this, the F-INSAS provides soldiers with ballistic helmets and ballistic goggles for protection against small projectiles and fragments, along with a bullet-proof vest. The helmet and



the bullet-proof jacket are capable of protecting the soldier against 9 mm bullets and ammunition fired from AK-47 rifles. For target acquisition, the soldier has rifle-mounted holographic sight for fast and accurate aiming with a range of 200 metre. The helmet has a mounted night-vision device for operating in low-light conditions, and the option of installing a thermal imager sight. Thermal imagers covert infrared energy from objects into thermal images.

The F-INSAS also comes with hands-free, secured advanced communications set for real-time exchange of information with the command post and fellow soldiers for enhanced situational awareness. Most importantly, all these items have been sourced from Defence Public Sector Undertakings, and private Indian industries. They have been indigenously designed by the Indian entities, including the DRDO and the ordnance factories ecosystem.

What is the F-INSAS modelled on?

Conceived in the 2000s, F-INSAS is one among many soldier modernisation programmes across the world. The US has Land Warrior, while the UK has FIST (Future Integrated Soldier Technology). According to estimates, over 20 armies around the world are following such programmes. The DRDO had conceptualised the F-INSAS (not to be confused with INSAS or Indian Small Arms System) in line with the targets of the Army's Infantry Soldier Modernisation Programme with an aim to optimise the soldier's performance across the full spectrum and duration of a military operation. DRDO scientists revealed that similar infantry modernisation programmes from the US, France, Germany and Israel were studied for the Indian project.

The quality requirements for the project were set by the Army. Officials also said that research and development efforts are still on to further finetune the F-INSAS for all types of conflict scenarios and terrains.

What are Nipun mines?

Nipun mines are indigenously designed and developed anti-personnel mines, termed by the DRDO as 'soft target blast munition'. These mines are meant to act as the first line of defence against infiltrators and enemy infantry. They have been developed with the efforts of Armament Research and Development Establishment, a Pune-based DRDO facility, and Indian industry. Anti-personnel mines are meant to be used against humans as against anti-tank mines that are aimed at heavy vehicles. They are smaller in size and can be deployed in large numbers. The Army has said that the mine will provide protection to the troops on the borders and is more potent and effective than the existing anti-personnel mine in its arsenal.

What is the Landing Craft Assault?

The Landing Craft Assault (LCA) is meant to serve as a replacement for the boats with limited capabilities currently in use in the Pangong Tso lake. The LCA, which has been indigenously developed by Goa-based Aquarius ShipYard Limited, is said to have better launch, speed and capacity to operate across water obstacles in eastern Ladakh. Similar vessels are already in operation in the Indian Navy.

Some other defence systems

Other than these systems and equipment, the Defence Minister also formally handed over to the Army a thermal imaging sight for T-90 tanks; hand held thermal imager; and frequency-hopping radio relay for tactical communication across much longer ranges.



Further, Downlink Equipment with Recording Facility to help helicopters in surveillance missions was also handed over. Using this system, reconnaissance data is recorded and can be accessed only when the helicopter returns to the base.

Some other defence systems included, Infantry Protected Mobility Vehicles; Quick Reaction Fighting Vehicles and Mini Remotely Piloted Aerial System surveillance, detection and reconnaissance at the infantry battalion and mechanised units level.

THE TEMPLES THAT JAWAHARLAL NEHRU BUILT

As India celebrates 75 years of Independence, Indians will see this as an occasion to recall Jawaharlal Nehru's immortal speech, "A Tryst with Destiny", delivered on the night of August 14, 1947, and its haunting poetic expressions — "At the stroke of the midnight hour, when the world sleeps, India awakes to life and freedom." For most, that speech and the man who spoke those words symbolised the spirit of a new nation just born. For them, some of the recent attempts to undermine Nehru's place in history may seem like a minor distraction.

Vision of a modern nation

Nehru's luminous legacy is deeply laid in India's growth story since Independence. In May this year, when the Life Insurance Corporation of India (LIC) launched India's largest public issue and collected ₹21,000 crore from the market, the nation was aware that this was a Nehruvian institution established in the early years of independent India. Equally, when we look at the celebrated names of global CEOs and corporate leaders, we can recognise many of them as Nehru's 'children', as they were educated at the iconic Indian Institutes of Technology (IITs) and Indian Institutes of Management (IIM).

In 1947, Nehru, as Prime Minister, inherited an India that was politically shattered, socially divided and emotionally devastated. Yet, with restraint and self-confidence, he steered the country through those turbulent times and laid out the vision of a modern, progressive nation that quietly earned the respect of the global community.

Ideas and institutions

Nehru's vision of India was anchored in a set of ideas such as democracy, secularism, inclusive economic growth, free press and non-alignment in international affairs and also in institutions that would lay the foundation for India's future growth. These institutions touched every kind of economic activity, ranging from agriculture to aviation and space research. An agnostic Nehru described them as "the temples of modern India". There were around 75 of these institutions including the Bhakra-Nangal dam, Bharat Heavy Electricals Limited, the All India Institute of Medical Sciences, the LIC, the Oil and Natural Gas Corporation, Indian Oil Corporation, the National Library of India and the National Institute of Design. Nehru saw them occupying the commanding heights of a stable, self-sustaining economy with people's welfare as their central mission. Nehru's inclusive vision ensured that these institutions spanned the entire social spectrum. When the IITs were planned, Nehru also established a network of Kendriya Vidyalayas. Along with large projects in steel and petroleum, Nehru saw the importance of promoting small and cottage industries and set up the Khadi and Village Industries Commission. When Bhilai, Durgapur and Rourkela were taking shape as functional townships, the Prime Minister also felt the need for a well-designed, modern city and thus was born Chandigarh. Chandigarh was perhaps India's first 'smart city' when that term was not yet fashionable.



Two of these institutions deserve special mention: the Election Commission of India and the Planning Commission. They relate to the fundamentals of the Nehruvian vision: the triumph of democracy along with development. Nehru's institutions flourished under the management of a group of accomplished persons who shared his idealism and his vision of a modern India. These were people of stature and high learning. They were technocrats, scientists and professionals with impressive records of past achievements. They included Homi Bhabha, Vikram Sarabhai, P.C. Mahalanobis, Verghese Kurien, S.S. Bhatnagar, S.Bhagavantam and C.D. Deshmukh. Each of them steered the fortunes of the project under them with high professional standards, laying down benchmarks for the performance of the project and identifying second layers of leadership for the project's future growth. Many of these institutions, over the years, rose to global standards. Indian Oil became the first Indian company to be listed in the Fortune 100, in 2014. Amul emerged as the country's best known consumer brand and India became the largest milk-producer in the world.

Shifts in the economy

Prime Minister Nehru's 17-year rule set the stage for momentum in the Indian economy and his management model became a template for many succeeding Prime Ministers. This was a period which saw seismic shifts in the Indian economy. The Green Revolution which transformed India from a basket case to a grain-exporting nation, the telephone revolution that changed the telephone from being a symbol of elite lifestyle to mass ownership, and the digital revolution which turned India into a global technology hub all played out one after another. And then came the momentous reforms in 1991 under Prime Minister P.V. Narasimha Rao which transformed the economy into an open, liberal and largely market-driven regime. The success of these missions owed a great deal to the Nehruvian model, with several scientists and technocrats playing a central role in these accomplishments, such as M.S. Swaminathan, Sam Pitroda, Dr. Manmohan Singh and Nandan Nilekani. Collectively, these shifts have lifted over 300 million Indians above the poverty line and heralded the arrival of a modern, diversified globally connected economy with a significant digital component.

Now, well into the third decade of the 21st century, India is widely recognised as the fastest-growing large economy of the world. It is an incredible transformation in scale and depth to unfold in 75 years. It all began with one man's dream and the many shrines of growth and development that he built. Their enduring impact reaffirms Nehru's place in history. Among the political leaders of the newly independent nations of the 20th century, Nehru stands out as a unique personality who combined intellectual stature with mass popularity. The Economist in a widely-read obituary titled "World Without Nehru", on May 30, 1964, observed, "Throughout the long years of his premiership, he retained his magical grip on the great masses of people." That equation, which an Indian Prime Minister had with his people, remains unequalled and untested till now.

WHEN CONSTITUENT ASSEMBLY ADOPTED THE FLAG OF FREEDOM

The National Flag, which is flying high across India as the nation celebrates 75 years of freedom, was adopted by the Constituent Assembly of India on July 22, 1947. On that date this year, Prime Minister Narendra Modi led the nation in "recall[ing] the monumental courage and efforts of all those who dreamt of a flag for free India when we were fighting colonial rule".

Recalling July 22, 1947

According to the official record of the proceedings of the Constituent Assembly, Dr Rajendra Prasad, who was in the Chair, announced that the first item on the agenda was "a Motion by Pandit



Jawaharlal Nehru about the Flag”. Thereafter, Nehru rose to move the following Resolution: “Resolved that the National Flag of India shall be horizontal tricolour of deep Saffron (Kesari), white and dark green in equal proportion. In the centre of the white band, there shall be a Wheel in navy blue to represent the Charkha. The design of the Wheel shall be that of the Wheel (Chakra) which appears on the abacus of the Sarnath Lion Capital of Asoka.

“The diameter of the Wheel shall approximate to the width of the white band.

“The ratio of the width to the length of the Flag shall ordinarily be 2:3.

Nehru clarified that the Flag must not be seen in communal terms, and that when the Flag was devised, there was no communal significance attached to it. “We thought of a design for a Flag which was beautiful, because the symbol of a nation must be beautiful to look at. We thought of a Flag which would in its combination and in its separate parts would...represent the spirit of the nation, the tradition of the nation, that mixed spirit and tradition which has grown up through thousands of years in India,” he said.

Although the Flag was different in some respects from the one used earlier, its “colours are the same, a deep saffron, a white and a dark green”. The famous wheel of Asoka, he said, “is a symbol of India’s ancient culture; it is a symbol of the many things that India had stood for through the ages”.

At the end of the day, the record says, “The motion was adopted, the whole Assembly standing.”

HIGH POINTS IN SCIENCE, TECHNOLOGY AND INNOVATION

Reflecting on 75 years of Independence makes one proud of the socio-economic developments of our country. The long period of colonial rule had robbed India of most of its wealth, and, more importantly, the skills required to sustain economic growth. Starting off as a poor country in 1947, with its GDP a mere ₹2.7 lakh crore, and food grain production a meagre 50 million tonnes, the challenges of educating the people, feeding the population, implementing democracy, promoting industry and trade, and ensuring the country’s security remained daunting. It is against this backdrop that the responsibility of developing the science, technology and innovation ecosystem fell upon the Council of Scientific and Industrial Research (CSIR), which had been founded in 1942.

The immediate priority of the CSIR was to establish a number of national laboratories under its umbrella, and also promote similar organisations independently. The CSIR started five of its own laboratories with support from the government and industry and raising resources through crowdsourcing. Similarly, in collaboration with the Sir Dorabji Tata Trust and the Government of Bombay, the Government of India (through the CSIR) started the Tata Institute of Fundamental Research, with the CSIR providing substantial financial support in the initial years.

Among the first examples of finding science and technology-based solutions was the harmonisation of existing varied calendar systems. A committee under the Chairmanship of Meghnad Saha was formed to address this issue. The committee’s report was published by the CSIR in 1955, which then led to its acceptance as the national calendar, now one of the national identity elements. Another example in the early years of Independence was to address the challenges in conducting democratic elections — preventing frauds, including double voting by the same person. The CSIR’s National Physical Laboratory developed the indelible ink made up of silver nitrate to address this concern. The indelible ink is used even today and exported to many countries, undoubtedly remaining one of the prized gifts of the CSIR to the nation.



The leather story

At the time of Independence, India did not have well-established industries in many sectors. The informal work sector was also highly unorganised without their skills being developed for any particular industrial segment. A key mandate of the CSIR was, therefore, to help develop local industries by making contemporary technologies available and training requisite manpower. A prominent example of the CSIR's contributions in this context has been in developing the leather industry. The making of finished leather products had remained elusive in the absence of a well-established leather industry and relevant technologies. Consequently, the leather industry employed less than 25,000 people at the time of Independence. In the 1970s, the Government took the decision of banning the export of raw hides and skins, and also imposing 25% export duty on semi-finished leather products. These decisions were a major turning point as far as the development of the leather industry in India was concerned.

In more than 50 years since then, the leather industry now has a workforce of more than 4.5 million, a large percentage of them being women, and a thriving market for Indian leather products around the world. Indian exports in this sector are close to \$6 billion. The CSIR's footprint in this sector has been transformative. First, when the CSIR-Central Leather Research Institute (CLRI) was established in 1948, it developed technologies for finished leather products, such as the first ever indigenous manufacture of leather chemicals, making the transition from semi-finished to finished leather possible. Further, the CSIR-CLRI routinely trained the next generation manpower for the leather industry. As a result, more than 40% personnel employed in the leather industry have been trained directly or indirectly in the CSIR-CLRI. Human resource development across all sectors, dominantly that in science, technology and innovation, has been the hallmark of CSIR.

Successes in technologies

The Green Revolution has been one of the crowning glories of science, technology and innovation. Similarly, the emergence of the generic pharmaceutical industry in India also has a fascinating history. During the Green Revolution, the CSIR's footprint could be seen in the development of agrochemicals and the mechanisation of agriculture. The chemicals industry needed the necessary thrust for its maturation although the Bengal Chemicals and Pharmaceuticals Ltd. had been formed by Acharya Prafulla Chandra Ray long before Independence. Two public sector companies were founded, post-Independence, based on technologies developed in the CSIR's laboratories — the Hindustan Insecticides Ltd. and Hindustan Organic Chemicals Ltd., the former to make agrochemicals. Similarly, production of anti-HIV drugs by processes developed in CSIR laboratories provided the necessary impetus to the growth of generic pharmaceutical companies. These indeed represent fine examples of academia-industry interactions from the early days of Independence.

The mechanisation of agriculture was achieved through the indigenous development of the Swaraj tractor at the CSIR-Central Mechanical Engineering Research Institute (CMERI), leading to the formation of Punjab Tractors Ltd. in 1970. Notably, the technical team of CSIR-CMERI shifted to this company, presenting one of the first successful models of a spin-off company from academia in the country.

Path to self-reliance

A significant impact of the CSIR is also seen in the food and nutrition industry, in the aerospace sector, in the health and biotechnology industry, in protecting India's traditional knowledge



systems, and in promoting crops for enhancing farmers' incomes. For example, in the 1950s, when solving the infant food problem appeared impossible, the CSIR successfully developed technologies to convert buffalo milk into powder and commercialised it with the help of Amul Industries. The Aroma Mission of the CSIR in recent times has been transforming the lives of thousands of farmers across the country. The cultivation of lavender in the Union Territory of Jammu and Kashmir has been attracting attention worldwide as India's 'Purple Revolution'. Thus, there are many examples of science, technology and innovation, which have allowed India to take definitive steps towards becoming an Atmanirbhar country. True Atmanirbharta will however emerge only if we remain at the forefront of futuristic technology development — a task clearly cut out for the CSIR.

Even as we attribute the growing affluence of Indian society to science, technology and innovation-led developments, the challenges for the future remain intimidating. Reducing dependence on natural resources, making all industrial processes circular so that no footprint of human activity is left, making technologies environmentally friendly, providing sufficient opportunities to all for living either in cities or in villages will remain priorities of science and technology. Moreover, the ancient wisdom of integrating science and spirituality by enhancing our understanding of nature in association with that of the human mind and spirit will be the fond hope of the science and technology community of India.

HISTORY OF THE PIN CODE, WHICH TURNS 50 THIS INDEPENDENCE DAY

The 75th Independence Day coincides with another milestone in the country's history — it was on August 15, 1972, that the Postal Index Number (PIN) was introduced in India. As the PIN code turns 50 on Monday, we look at its history and evolution.

Why was the PIN code introduced?

According to the Department of Posts, there were 23,344 post offices, primarily in urban areas, in India at the time of Independence. But, the country was growing rapidly and the postal network had to keep pace. The PIN code was meant to ease the process of mail sorting and delivery in a country where different places, often, have the same or similar names, and letters are written in a wide variety of languages.

How does the PIN code work?

The PIN is made up of six digits. The first number indicates the postal region — Northern, Eastern, Western, Southern; and number 9, which signifies the Army Postal Service. The second number denotes a sub-region, and the third represents the sorting district. The remaining numbers narrow the geography further to the specific post office making the delivery.

Who was the person behind the initiative?

The person behind the initiative was Shriram Bhikaji Velankar, additional secretary in the Union Ministry of Communications and a senior member of the Posts and Telegraphs Board.

Velankar was also a Sanskrit poet of eminence who had been conferred the President's Award for Sanskrit in 1996, three years before he died in Mumbai. Among Velankar's 105 books and plays in Sanskrit was the Viloma Kavya, which is considered a literary masterpiece because it comprises verses in praise of Lord Rama when read from one side and, when read backwards, it transformed into verses dedicated to Lord Krishna. Velankar had set up a cultural group in Mumbai, called the



Dev Vani Mandiram, which worked to create awareness about Sanskrit in India and foreign countries. Velankar was also the chairman of the World Philatelic Exhibition, called Indipex, which was held in New Delhi in 1973 and featured 120 countries. He retired from his government service on December 31, 1973.

What are some parallel systems followed world over?

Globally, in the US, the Zone Improvement Plan (ZIP) code was introduced July 1, 1963, under the aegis of the Postal Service Nationwide Improved Mail Service plan to improve the speed of mail delivery. According to the Library of Congress, "Under the old system letters went through about 17 sorting stops – the new system was going to be considerably less time-consuming utilizing newer, more mechanical systems". In the UK, the sorting of mail started getting mechanised in the mid-1960s.

Is the PIN code still relevant?

With the spread of the Internet, when people are sending fewer letters, it is easy to question the relevance of the PIN code. But try to order a food delivery or a parcel over online shopping and the importance of Velankar's work in India will become evident.

WHAT ARE THE RULES FOR DISPLAYING THE TRICOLOUR?

On August 12, the Department of Post (DoP) revealed that it had taken only 10 days to sell one crore National Flags through its widespread network of 1.5 lakh post offices across the country and online channels. Retailers in cities, towns and villages are also witnessing high sales of the flag as people prepare to celebrate the 75th Independence Day by participating in the government's Har Ghar Tiranga campaign, being held under the Azadi Ka Amrit Mahotsav programme. The purpose is to spread the message of patriotism, but not many know that there are a number of rules surrounding the act of hoisting or displaying the Tiranga. These instructions are contained in the Flag Code of India 2002 and upheld by the Prevention of Insults to National Honour Act, 1971.

Who is allowed to fly a national flag and on which days?

According to the Flag Code of India, paragraph 2.2, which came into effect on January 26, 2002, any person, organisation, private or public, or educational institution (including scout camps) can hoist or display the Tricolour on "all days or occasions in accordance with the dignity and honour of the National Flag".

How should you choose a flag?

The flag can be as big or small as one wants "but the ratio of the length to the height (width) of the National Flag shall be 3:2". So, the flag must always be a rectangle rather than square or any other shape. After an amendment on December 30, 2021, the material of the flag has been decided as "handspun and handwoven or machine-made, cotton, polyester, wool, silk or khadi bunting". If the flag is placed in the open or on the house of a member of the public, it may be flown day and night.

What if your flag is damaged by the elements or otherwise?

It is against rules to display a damaged or disheveled National Flag. At all times, the National Flag must be displayed in a position of honour and should be distinctly placed. "No other flag or bunting



shall be placed higher than or above or side by side with the National Flag; nor shall any object including flowers or garlands, or emblem be placed on or above the flagmast from which the National Flag is flown". The Tricolour should never be used as a festoon, rosette, bunting or for a decorative purpose. No advertisements should be festooned to the pole from which it flies.

Is it ok to wear the Tricolour in a display of love for the nation?

A person is forbidden by law to use the national flag "as a portion of costume or uniform". It cannot be used as an accessory to be worn below the waist of any person "nor shall it be embroidered or printed on cushions, handkerchiefs, napkins, undergarments or any dress material".

Can it be put up on vehicles?

The National Flag cannot be flown on any vehicle except those of the President, Vice President, Prime Minister, Governor and other dignitaries. The flag should also not be used to cover the sides, back, and top of any vehicle.

What should you do with the Tricolour after Independence Day?

The Tricolour should not be stored in a way that might dirty or damage it. In case your flag is damaged, the Flag Code instructs you not to cast it aside or treat it disrespectfully but "destroy it as a whole in private, preferably by burning or by any method consistent with the dignity of the flag". People, who are waving flags made of paper, should not throw these on the ground after the ceremony. The flag "shall not be allowed to touch the ground or the floor or trail in the water".

What is the punishment for disrespecting the flag?

According to Section 2 of the Prevention of Insults to National Honour Act, 1971, "whoever in any public place or in any other place within public view burns, mutilates, defaces, defiles, disfigures, destroys, tramples upon or otherwise brings into contempt (whether by words, either spoken or written, or by acts) the Indian National Flag....shall be punished with imprisonment for a term which may extend to three years or with a fine, or with both".

VIOLENCE AGAINST DALIT STUDENT IN RAJASTHAN IS STARK REMINDER OF NATION'S UNFINISHED TASKS. GEHLOT GOVERNMENT MUST ACT SWIFTLY

On Saturday, as the nation prepared to commemorate its 75th Independence Day, a nine-year-old Dalit child from Rajasthan's Jalore district succumbed to his injuries, allegedly inflicted by a person who should have given wings to his dreams — his teacher. The FIR in the case should be read as a sobering reality check on the terrible inequalities that continue to afflict and debilitate the nation as it aims to become the "destination," where as Prime Minister Narendra Modi said from the ramparts of Red Fort, "aspirations are met". "Indra was a child. He didn't know that the matki (earthen pot) that he drank from had been kept separately for the savarna jati (upper caste) teacher"... "the teacher abused him with casteist slurs and beat him up, resulting in internal injuries", the FIR says. These words should prick the nation's conscience, and remind policymakers of unmet promises and unfinished tasks, as India begins the "Amrit Kaal" to the centenary of its Independence. The Ashok Gehlot government must ensure that due processes are rolled out swiftly and surely to provide justice in this case.

That casteist violence is a grim lived reality — at odds with India's constitutional principles — for a large section of the country's Scheduled Caste (SC) and Scheduled Tribe (ST) communities is



borne out by numerous reports and surveys. National Crime Records Bureau (NCRB) data show that a crime was committed every 10 minutes against a person from an SC community in 2020. Rajasthan along with Bihar, UP and Madhya Pradesh accounts for two-thirds of such crimes though these four states constitute about 40 per cent of the country's population. Cases registered in Rajasthan under the Scheduled Castes and Scheduled Tribes (Prevention of Atrocities) Act went up from around 6,000 in 2018 to more than 8,500 in 2020. Worryingly, the conviction rate in the state in such cases has gone down in these four years — from 11 per cent in 2016 to less than 8 per cent in 2020.

From the lack of enabling measures that force thousands of SC &ST students to drop out of institutions of learning every year to the persecution that can drive a young scholar like Rohith Vemula to take his own life, the discrimination faced by Dalit youth is endemic and deeply ingrained. Swift action in the case of the atrocity at Jalore will signal the state's resolve to stamp out the oppression that bedevils the aspirations of its young. That should also be an urgent imperative for a nation aspiring to be a knowledge hub.

DAYLIGHT KNOCK

The Delhi government's new excise policy was controversial almost since it was brought in last year in November with the stated aim of tackling corruption. It soon became mired in accusations of rules and procedures being violated, and of cartelisation and kickbacks; Lieutenant Governor Vinai Kumar Saxena recommended a CBI probe; and nine months after its announcement, the Arvind Kejriwal government rolled back the policy in July. And yet, the CBI raid at the residence of Deputy Chief Minister of Delhi Manish Sisodia also comes in a climate that sparks this question: Is the action of the Central agency about policy or politics, or both? The innocence, or lack of it, of Sisodia and others accused of complicity in the alleged irregularities, will only be known after the law takes its course. For now, however, the CBI landing at Sisodia's doorstep on Friday morning also draws attention, and concern, to the other story the senior AAP leader has been pulled into — of central investigative agencies under the BJP-led government paying excessive and excessively focused attention to the BJP's political rivals. Even a cursory look throws up a clear pattern that is worrying in a system in which the independence of these agencies is — or should be — a central tenet: There is a sharp jump in the number of political leaders against whom the ED has taken action in the NDA years compared to those in the tenure of the UPA, and within this, Opposition politicians have been targeted overwhelmingly disproportionately.

The cases are piling up against non-BJP politicians and all the incriminating images of stashes of cash found in addresses linked to TMC minister Partha Chatterjee, now in custody, cannot counter the growing impression of a government aggressively (mis)using all it can to settle political scores. It is not as if other governments have not made central agencies dance to a political tune — the CBI was called the Congress Bureau of Investigation and it was also in the tenure of the Congress-led UPA that the apex court famously described it as a "caged parrot". But the gloves seem to have come off much more, the political calculation seems far more bare-knuckled now. Both the frequency with which the agencies are wielded against political opponents, and the scale of these operations, have shown a quantum leap under the BJP-led NDA. And in some cases, when the politician has switched sides, the agencies have turned forgiving overnight.

The costs of this take-no-prisoners aggression shown by the Executive armed with the quiescent Central Agency are sobering, especially given that countervailing institutions are falling short in applying the check and balance. Last month, the Supreme Court upheld the constitutionality of the Prevention of Money Laundering Act, 2002, a law that upends the first principles in criminal law,



including the presumption of innocence of the accused. In doing so, it drastically lowered the bar for the state to encroach on individual rights in the name of going after corruption. That's surely a laudable goal but the clean-up process needs to pass the smell test. These days, quite often, it doesn't.

TOO GOOD TO BE TRUE

The announcement on social media by Urban Development Minister Hardeep Puri, of the Modi government's decision to house about 1,100 Rohingya migrants now living in makeshift slums, in flats with amenities instead, proved "too good to be true". Within hours, Mr. Puri was countered by the Home Minister's Office, which denied any such intention, instead terming them "illegal foreigners". It said the plan was to keep them sequestered in their present homes, which would be designated as detention centres while the Government continued efforts to deport them to Myanmar. The announcement itself was puzzling. Mr. Puri is a senior Minister and an experienced diplomat, and his statement was unequivocal. Not only did he say that the plan was to move the migrants from squalor to apartments built for the Economically Weaker Sections on the outskirts of Delhi, but that they would also be provided facilities and protection by the Delhi police — proof of how India had always welcomed refugees. The details Mr. Puri shared, as well as documents from 2021, showed that the Government had indeed been considering moving the Rohingya, who live on land donated by an Islamic charity, after their previous homes were burnt down. There has been some suggestion that the ruling party faced backlash from its supporters, including a stern press statement from the Vishva Hindu Parishad, and it would be unfortunate if that was the principle behind what appears to be a reversal of policy.

On broader terms, the Rohingya housing issue seems to be an example of the clash between the Modi government's foreign policy commitments and its domestic politics. Although, as Mr. Puri tweeted, India has "respected and followed" the 1951 UN convention of refugees — it is not a signatory — Mr. Modi's colleagues such as Home Minister Amit Shah have frequently disregarded the conventions: referring to migrants as "termites", stating in Parliament that India would "never accept" the Rohingya, and even violating the UN principle of non-refoulement by deporting a Rohingya woman to Myanmar this year. The treatment of the Rohingya, who fled to India in 2012 and 2017 after state-sponsored ethnic cleansing, has also been far from the Government's much touted slogan of "vasudhaiva kutumbakam". The Rohingya have been driven out of homes in Rajasthan and Haryana, stigmatised by local authorities and intelligence agencies who accuse them of criminal and even terrorist intent. New Delhi has also failed thus far to play its role as a "Regional leader" in convincing Myanmar to provide its citizens homes and assurances of safety, or in brokering dialogue between Dhaka and Naypyidaw to ensure their return; about a million Rohingya live in Bangladesh, and an estimated 40,000 in India (Pakistan and Saudi Arabia house about 7,00,000 between them). In the absence of long-term measures to resolve the issue, the Government could at least, as Mr. Puri suggested, provide the hapless community better living conditions, until their future is secured.

WHY WILL AIRLINES HAVE TO SHARE PNR DATA?

The story so far: The Passenger Name Record Information Regulations, 2022, notified by the Central Board of Indirect Taxes and Customs (CBIC) under the Ministry of Finance, on August 8, requires airlines to mandatorily provide details of all international passengers on flights arriving into and departing from India to the Customs department. This is for preventing and prosecuting



offences under the Customs Act, 1962 relating to smuggling of narcotics, gold, arms & ammunition that impact national security.

What is the process?

Airlines will have to transfer the “passenger name record (PNR) information” from their reservation system to the database of the Customs department. This includes details such as PNR, date of reservation, date of travel, credit card number, seat information as well as changes to the PNR. The CBIC will set up a database, the National Customs Targeting Centre-Passenger, to collect passenger information for “risk analysis”. Such data can also be sought by other law enforcement agencies or government departments of India or any other country. The information will have to be shared at least 24 hours before departure and failure to comply will invite a penalty of ₹25,000 to ₹50,000 for every act of non-compliance.

How has it been received by airlines?

The regulations come five years after the Finance Bill, 2017 proposed amending the Customs Act, 1962 to allow exchange of passenger data. The International Air Transport Association (IATA), a trade association representing 290 airlines globally, says it “welcomes the notifying of the PNR regulations by the CBIC, thereby establishing a proper legal framework for the implementation of the PNR data program for India.” It adds that this should now “bring an end to the non-standard passenger data requests from the airlines, by multiple agencies at various airports/stations.” Airlines say the government must hold consultations, frame detailed guidelines and provide a feasible timeline for implementation. They also say that since they only pass on the information submitted by passengers, if data fields are missing or if details provided are fake, they should not be penalised.

How were Indian agencies collecting passenger information earlier?

Earlier, the Bureau of Immigration collected passenger details under the Advance Passenger Information System (APIS) following an amendment in 2008 by the Ministry of Home Affairs to the Foreigners Act, 1946. This allowed collection of data pertaining to foreigners, but not Indian citizens traveling in and out of the country. The APIS is contained in the Departure Control System of an airline and captures data when passengers check-in at airports and transfers the details to the destination country 15 minutes before flight departure.

But PNR information is captured by the airline’s reservation system from the time a passenger buys a ticket and offers richer data for risk management such as whether a passenger is travelling alone, or whether s/he paid in cash and if there were changes in a passenger’s itinerary. These can be shared 24 to 48 hours before departure allowing intelligence agencies enough time to carry out risk analysis.

Industry experts say globally Customs is the lead agency for collecting PNR-related information, and is better suited than immigration agencies because of the organised nature of crimes and terrorist activities.

What happens to the privacy of passengers?

The CBIC says the format for data exchange between airlines and the Customs systems is a standard electronic message format endorsed jointly by the World Customs Organisation (WCO), International Civil Aviation Organisation (ICAO) and the IATA. Such data will be retained for a maximum period of five years after which it will be disposed of by de-personalisation or



anonymisation but can be “re-personalised and unmasked when used in connection with an identifiable case, threat or risk for the specified purposes,” says the CBIC. “Collecting data on everyone to then do an undetermined risk analysis, rather than selecting a few passengers is problematic. De-anonymising data is a big area of concern on two grounds — it raises questions about the type of anonymisation which can be easily reversed; secondly, there needs to be a high barrier for permitting de-anonymisation and has to be done only on very serious grounds. Moreover, all of this is happening when there is no line of sight on a data protection law and what happens to passengers if the data is breached,” says Prateek Waghre, Policy Director, Internet Freedom Foundation. The Centre on August 3 withdrew the Personal Data Protection Bill, three years after it was tabled in the Lok Sabha in December 2019.

WHAT IS DIGIYATRA, THE CONTACTLESS PASSENGER PROCESSING SYSTEM FOR AIRPORTS

The Delhi International Airport Ltd (DIAL), run by GMR, Monday announced the soft launch of the Centre’s DigiYatra initiative, rolling out the beta version of its app for Android platforms. DigiYatra, the passenger processing system based on facial recognition technology, has been piloted at the Delhi airport and has had the required infrastructure set up at the airport’s Terminal 3.

What is DigiYatra and how will it work?

DigiYatra envisages that travellers pass through various checkpoints at the airport through paperless and contactless processing, using facial features to establish their identity, which would be linked to the boarding pass.

With this technology, the entry of passengers would be automatically processed based on the facial recognition system at all checkpoints – including entry into the airport, security check areas, aircraft boarding, etc.

How can people avail the DigiYatra facility?

To use this facility, passengers will need to first download the DigiYatra app. The Android version of the app is out, while the iOS version is expected to be released in the coming weeks. Users can register on the app using Aadhaar credentials, followed by a selfie with the Aadhaar card. After this, vaccination details using CoWIN credentials will have to be added to the app. Then, the person will have to scan his or her boarding pass with the QR code or Bar code, after which the credentials will be shared with the airport.

For entry into the airport, passengers will need to scan their boarding passes at the e-gate and look into the facial recognition system camera installed there. A similar method will be applicable for entry into other checkpoints.

How is DigiYatra being implemented?

Last month, the Consultative Committee of the Ministry of Civil Aviation met to discuss the DigiYatra project. The project is being implemented by the DigiYatra Foundation — a joint-venture company whose shareholders are the Airports Authority of India (26% stake) and Bengaluru Airport, Delhi Airport, Hyderabad Airport, Mumbai Airport and Cochin International Airport. These five shareholders equally hold the remaining 74% of the shares.

The DigiYatra Foundation will be the custodian of the passenger ID validation process. It will also define the criteria for compliance and guidelines for the local airport systems. There will be



regular audits of the various compliances and guidelines (including guidelines on security, image quality, and data privacy) defined by the DigiYatra guidelines for the local airport Biometric Boarding Systems.

Which other airports will have DigiYatra?

In the consultative committee meeting, it was proposed that in the first phase, DigiYatra will be rolled out at Varanasi and Bengaluru this month, and at five airports — Pune, Vijayawada, Kolkata, Delhi and Hyderabad — by March next year. The Airport Authority of India (AAI) will identify the airports where DigiYatra will be implemented in a phased manner.

ABANDONED BOAT WITH WEAPONS TRIGGERS SCARE

A high alert was sounded in Maharashtra after an abandoned boat containing three AK-series assault rifles and 10 boxes of live rounds was found along the Raigad coastline on Thursday. However, the State government said there was no confirmation of a terror angle.

Deputy Chief Minister and Home Minister Devendra Fadnavis told the Assembly that the U.K.-registered yacht, which bore the sticker of 'Neptune Maritime Security' (a security firm providing armed services for shipping and oil firms), belonged to an Australian national whose husband is the captain of the vessel.

He said that as the engine of the boat, which was making its way from Muscat to Europe, had malfunctioned, its occupants had to be rescued. Owing to rough seas, the boat could not be towed and so it went adrift with the weapons. "The 16-metre boat was found near the waters off Harihareshwar [in Raigad's Shrivardhan taluk]. While there is no confirmation of any terror angle, we are not ruling out anything and are investigating all aspects," said Mr. Fadnavis.

The presence of the boat created panic as Mumbai had been targeted by Pakistan-based terrorists on November 26, 2008, who had entered the city by a similar sea route, off the Raigad coast.

The police were put on high alert and that the administration was constantly in touch with the Coast Guard on the issue. The Deputy Chief Minister said Central investigating agencies were being roped in and that the government would deploy additional police force, if needed, to ensure that the upcoming Janmashtami celebrations pass off smoothly.

A Coast Guard official too dismissed the concern of a security threat, stating that the boat had given a distress call while sailing from Oman to Europe and that people onboard were rescued by ships in the vicinity of Muscat on June 26.

The arms vendor had been contacted and the serial numbers of the weapons found onboard match with the ones missing from the vendor's inventory, the official said.

Earlier, police officials said multiple teams were rushed to the spot and the three AK-56 assault rifles and 10 boxes containing over 200 live rounds were seized. A wireless alert was sent out across the Raigad district and checkpoints were set up while security was beefed up in Mumbai and other cities.

Nationalist Congress Party leader and Shrivardhan MLA Aditi Tatkare demanded that Maharashtra Chief Minister Eknath Shinde and Mr. Fadnavis urgently appoint a special team of the Anti-Terrorist Squad or any other State agency to probe the case.



THE RECENT BLOCKING OF THE VLC MEDIA PLAYER

The story so far: The website of VideoLAN Client (VLC) has been banned in India. Although there is no official information on the ban, VLC states that according to its statistics, its website has been banned since February this year.

What is VideoLan?

VLC gained popularity in India in the late 90s when advancements in information technology led to the penetration of personal computers in Indian homes. It continues to be one of the most popular media players. Apart from being free and open source, VLC easily integrates with other platforms and streaming services and supports all file formats without requiring additional codecs.

Do we know why VLC was banned?

Given VLC's popularity, the ban on the VLC website caused quite a kerfuffle. Civil society organisations have repeatedly filed RTI applications with the Ministry of Electronics and Information Technology (MeitY). These applications have been met with similar responses stating that "no information is available" with the Ministry. This is despite the fact that when trying to access the website previously, the message "The website has been blocked as per order of Ministry of Electronics and Information Technology under IT Act, 2000", was displayed. Lack of authoritative information from the government has led to speculation that VLC was banned along with the 54 Chinese applications in February this year. Although VLC is not a Chinese app, reports from cybersecurity firms, such as Symantec, in April this year suggested that Cicada, a hacker group allegedly backed by China, has been using the VLC Media Player to deploy a malicious malware loader. It is being suggested that this was part of a longer cyberattack campaign that started in mid-2021 and was still active in February 2022. It pointed out that Cicada's targets were spread over a number of regions, including India. This is also being used to explain why the present ban is a soft ban rather than a hard ban. While the VLC website has been banned, the VLC app continues to be available for download on Google and Apple stores. This is probably because the app stores' servers where the mobile apps are hosted are considered safer than servers where the desktop versions are hosted.

In which situations can online content be blocked to the public?

There are two routes through which content can be blocked online — executive and judicial. First, given the reach of the internet and its potential to cause significant harm to online users, governments across the world reserve the power to monitor and issue directions for regulation of the online content being available in their jurisdictions. The Government of India gets this power from Section 69A of the Information Technology Act, 2000. Section 69A allows the government to direct an intermediary to "block for access by the public any information generated, transmitted, received, stored or hosted in any computer resource" if it is "necessary or expedient to do so, in the interest of sovereignty and integrity of India, defence of India, security of the state, friendly relations with foreign states or public order or for preventing incitement to the commission of any cognisable offence". Section 69A draws its power from Article 19(2) of the Constitution which allows the government to place reasonable restrictions on the fundamental right to freedom of speech and expression. Second, courts in India, also have the power to direct intermediaries to make content unavailable in India to provide effective remedy to the



victim/plaintiff. For example, courts may order internet service providers to block websites which provide access to pirated content and violate the plaintiff's copyright.

What is the procedure for blocking access to content online?

A detailed procedure for blocking content is provided by the Information Technology Rules, 2009 (IT Rules, 2009) that have been formulated under Section 69A of the Information Technology Act, 2000. An important point to note is that only the Central government can exercise this power of directing intermediaries to block access to online content directly, and not the State governments. The procedure typically provides that Central or State agencies will appoint a "nodal officer" who will forward the blocking order to the "designated officer" of the Central government. The designated officer, as part of a committee, examines the request of the nodal officer. The committee comprises representatives from the Ministries of Law and Justice, Information and Broadcasting, Home Affairs, and the Cert-In. The creator/host of the content in question is given a notice to submit clarifications and replies. The committee then makes a recommendation on whether the request of the nodal officer should be accepted or not. If this recommendation is approved by the MeitY, the designated officer can direct the intermediary to remove content.

How can this process be improved?

Civil society organisations have been advocating for certain reforms to the IT Rules, 2009 for some time now. The first is on the aspect of transparency. As witnessed in the case of VideoLan's website blocking, there is no clarity on why its website has been blocked. Reasons for the same continue to be articulated on conjecture. Rule 16 of the IT Rules, 2009 provides that strict confidentiality is to be maintained with respect to any requests or actions under the IT Rules, 2009. This should be revisited and an element of transparency should be introduced whereby VideoLAN is given a reason for why such an order was made, something that has been done in the recent order in the Tanul Thakur case. Second, even though the IT Rules provide for an opportunity of hearing to the creator/host of content, given VideoLAN's cluelessness it seems that this opportunity may not be afforded to affected parties in all cases. The lack of an opportunity to submit clarifications/replies by the creator/host violates the principles of natural justice. It can also lead to erroneous decision making by the committee, which may not be in possession of the full facts, that can have significant financial consequences for the blocked online service provider.

Third, a recent RTI has disclosed that the Review Committee, which is required to meet every two months to review orders of the committee, has not disagreed with a single decision of the committee. This raises doubts on the effectiveness of the review mechanism which has been provided as a safeguard against excesses of the committee.

Fourth, given that non-compliance with directions under the IT Rules can lead to loss of immunity from liability for content being hosted, it has been argued that intermediaries over-comply with these directions, which can have chilling effects on free speech. The Supreme Court in Shreya Singhal has upheld the procedure enshrined in IT Rules, 2009 on the basis that it provides for adequate application of mind and transparency. The government would do well to follow its own rules, in form as well as spirit.

HAVE COASTAL ECOSYSTEM NORMS BEEN VIOLATED?

The story so far: This week, the Comptroller and Auditor General (CAG) of India tabled a report in Parliament on whether steps taken by the Union Environment Ministry to conserve India's coastal



ecosystems have been successful. The CAG frequently undertakes ‘performance audits’ of government programmes and ministries. This latest report contains the observations from an audit of ‘Conservation of Coastal Ecosystems from 2015-20.’

What are the Centre’s obligations on conserving the coastline?

The government has issued notifications under the Environment Protection Act, 1986, to regulate activities along India’s coasts particularly regarding construction. The Coastal Regulation Zone Notification (CRZ) 2019, implemented by the Ministry, classifies the coastal area into different zones to manage infrastructure activities and regulate them. The three institutions responsible for the implementation of the CRZ are the National Coastal Zone Management Authority (NCZMA) at the Centre, the State/Union Territory Coastal Zone Management Authorities (SCZMAs/UTCZMAs) in every coastal State and Union Territory and the District Level Committees (DLCs) in every district that has a coastal stretch and where the CRZ notification is applicable. These bodies examine if CRZ clearances granted by the government are as per procedure, if project developers once given the go-ahead are complying with conditions, and if the project development objectives under the Integrated Coastal Zone Management Programme (ICZMP) are successful. They also evaluate the measures taken up by the government towards achieving the targets under Sustainable Development Goals, a set of United Nations-prescribed targets for countries towards eradicating poverty and becoming sustainable societies.

Why did the CAG undertake this audit?

The CAG has a constitutional mandate to investigate and report on publicly funded programmes. The CAG conducted “pre-audit studies” and found that there were large-scale CRZ violations in the coastal stretches. Incidences of illegal construction activities (reducing coastal space) and effluent discharges from local bodies, industries and aquaculture farms had been reported by the media and this prompted it to undertake a detailed investigation.

What did the audit find?

The audit pointed out various categories of violations. For one, the Environment Ministry hadn’t notified NCZMA as a permanent body and it was being reconstituted every few years. In the absence of defined membership, it was functioning as an ad-hoc body. There were instances of the Expert Appraisal Committees — a committee of scientific experts and senior bureaucrats who evaluate the feasibility of an infrastructure project and its environmental consequences — not being present during project deliberations. There were also instances of the members of the EAC being fewer than half of the total strength during the deliberations.

The SCZMA had not been reconstituted in Karnataka and there was delayed reconstitution in the States of Goa, Odisha and West Bengal. The DLCs of Tamil Nadu lacked participation from local traditional communities. In Andhra Pradesh, DLCs were not even established.

There were instances of projects being approved despite inadequacies in the Environment Impact Assessment (EIA) reports. These included non-accredited consultants preparing the EIA, using outdated data, not evaluating environmental impacts of the project, not appraising the disasters which the project area was prone to and so forth.

What problems did the CAG find in the States?

Tamil Nadu didn’t have a strategy in place to conserve the Gulf of Mannar Islands. In Goa, there was no system for monitoring coral reefs and no management plans to conserve turtle nesting



sites. In Gujarat, instruments procured to study the physiochemical parameters of soil and water of the inertial area of the Gulf of Kutch weren't used. Sea patrolling in Gahirmatha Sanctuary, in Kendrapara, Odisha did not happen.

A research laboratory at Dangmal, Kendrapara District, Odisha constructed in 2016 has not yet been made functional. There was no website to disseminate the information related to the NCZMA, the CAG found, which is a clear violation of the mandated requirements of the Authority.

What lies ahead?

These reports are placed before the Standing Committees of Parliament, which select those findings and recommendations that they judge to be the most critical to public interest and arrange hearings on them. In this case, the Environment Ministry is expected to explain omissions pointed out by the CAG and make amends.

DON'T MISLEAD PUBLIC AGAINST ALLOPATHY, HC TELLS RAMDEV

The HC's remarks came while hearing a lawsuit against him by several doctors' associations for allegedly spreading misinformation concerning the use of Patanjali's Coronil for COVID-19.

Senior advocate Akhil Sibal, appearing for the doctors' associations, submitted that even recently, Mr. Ramdev made statements in public advertising Coronil as a treatment for COVID-19 and also suggesting the inefficacy of vaccines against COVID-19.

When the High Court was informed that Mr. Ramdev in a recent statement made reference to a leader of a foreign nation contracting COVID-19 even after being vaccinated, Justice Bhambhani expressed his concerns over "people being named" in Mr. Ramdev's statements.

"Leaders are being named which will affect our good relationships with foreign nations," Justice Bhambhani said.

"You are welcome to have your followers. You are welcome to have people who will believe whatever you say. But, please, do not mislead the public at large," Justice Anup Jairam Bhambhani told Mr. Ramdev.

Senior advocate P.V. Kapur, appearing for Mr. Ramdev, said that the process has already been initiated to remove any reference to "treatment" or "cure" in relation to Coronil from their website.

WALKING A TIGHTROPE IN MESSAGING TRANSMISSION ROUTES

Researchers at the National Institute of Virology, Pune, had recently posted the case report of the first two imported monkeypox cases that were detected in Kerala. But the people who tested positive for monkeypox virus had returned from the United Arab Emirates just days before they were detected with monkeypox infection. In a preprint (which is yet to be peer-reviewed), the researchers have detailed the clinical presentation of the infection in these people, and based on genome sequencing data have designated them as belonging to the A.2 clade.

The likely mode for transmission of monkeypox virus (MPXV) in both cases has not been mentioned in the preprint. In the first case — a 35-year-old male — the researchers say multiple vesicular rashes were seen in the "oral cavity and lips followed by a single lesion on the genital



organ". The person had revealed similar lesions in people whom he had come in contact with a week before the onset of symptoms but denied any sexual contact.

In the second case, genital swelling was seen on July 8, 2022, and two days later, multiple vesicular rashes developed on the genital organ and on both hands; lesions were seen in a few other parts of the body couple of days later. This person, too, had denied any sexual or physical contact with anyone with suspected or confirmed monkeypox infection.

As per the global update by WHO, as of August 10, 98.7% of 18,940 people with confirmed infection were men. Among cases with known data on sexual orientation, 97.2% (8,224 of 8,462) identified as men who have sex with men (MSM). Of the 5,473 cases where the route of transmission was reported, 91.5% was through a sexual encounter. This would mean that in about 8.5% of cases the route of transmission was not sexual.

Route of infection

While the first two people in India who tested positive for the monkeypox virus had developed initial symptoms (rashes/lesions), including in the genital area, even before travelling from the United Arab Emirates to Kerala, both had denied sexual contact with anyone with confirmed or suspected infection. While other routes of transmission cannot be ruled out in both cases, it is pertinent to note that lesions were first seen in the genital and/or oral areas.

The reasons for denying the sexual route of transmission could be due to fear of stigma and discrimination.

"There is both a legal and social issue for denying sexual route of transmission," says Dr. Vinod Scaria, a senior scientist at the Institute of Genomics and Integrative Biology (CSIR-IGIB). "Homosexuality is a crime in UAE and people can get prosecuted. So, expatriates who develop lesions fly back to their respective countries."

Since genome sequence data are posted along with the date and place, it is possible to identify the infected people and trace them, especially since only two sequences have been posted from India. "So even if they had declared the route of transmission as sexual, it is important not to reveal it in the study," says Dr. Scaria.

Multiple routes of spread

As per WHO, majority of cases are among men who have sex with men, and sexual encounter is the route of transmission in 91.5% of cases with the known routes of spread. Both legal and social acceptance of men who have sex with men is very high in the U.S. and many countries in South America and Europe. Despite homosexuality being decriminalised in India, the acceptance is not the same in India, the reason why some people may not disclose the sexual route of transmission of monkeypox virus.

"That is why public health communication about the different routes of transmission is critical. Also, the demographics could change as we go ahead. The communication from India's health ministry has been quite straight on this. It clearly states that anyone can get infected," says Dr. Scaria.

Globally, the virus has already spread beyond the MSM networks. Among the people for whom the route of transmission is known, 8.5% of cases are outside the MSM networks. So even though the majority of cases are being reported in men who have sex with men, anyone who comes in direct



contact with an infected person or even with towels and bedsheets used by an infected person can get infected.

“While the majority of cases are in the MSM community globally, anyone can get infected through other routes. All efforts and attempts should be directed at ensuring that people who have been infected do not face any stigma and discrimination. Else, we will end up driving monkeypox spread under the radar,” says Dr. Anant Bhan, a researcher in global health, bioethics and health policy.

Nine cases

As of August 11, 184 suspected cases have been tested and nine monkeypox cases have been detected in India. All the five cases detected in Kerala are imported, while all four people detected in Delhi have no international travel history and the index case has not been identified for all three. A Mumbai-based doctor, Dr. Ishwar Gilada, told Bloomberg that two people with suspected monkeypox infection refused to get tested about two months before the first case was reported in Kerala.

The importance of timely testing and isolation of cases to limit virus spread cannot be overemphasised. Equally, sequencing the genomes and posting the data on global databases is imperative. NIV Pune has so far shared only two genome sequences on GISAID. Besides NIV Pune, 15 Viral Research and Diagnostic Laboratories (VRDL) of ICMR have been testing for the virus. All 15 VRDL labs are required to send the positive samples to NIV for confirmation.

Currently, NIV holds all the positive samples only it can sequence the genomes and share them. A large number of SARS-CoV-2 genomes were sequenced and shared nationally and in global databases only when many government labs outside the ICMR were allowed to both test and sequence the genomes.

As of August 11, over 33,000 monkeypox cases have been reported globally. The U.S., with nearly 10,400 cases, accounts for one-third of the total cases, and 41 countries in Europe reported over 17,500 cases.

HIV DRUGS SHORTAGE IS A CHALLENGE TO ENDING AIDS IN INDIA

In June, PLHIV (People Living with HIV) networks across the country started witnessing an acute shortage of certain Antiretroviral (ARV) drugs in Anti-Retroviral Therapy (ART) centres. Among them were pediatric formulations and dolutegravir, the backbone of HIV treatment.

In the summer heat, PLHIV have been protesting peacefully for the past 23 days continuously on the premises of the National AIDS Control Organisation (NACO). The dharna is calling attention to the need for emergency procurement of ARVs and the unintended consequences of a weak and ineffective supply chain.

Suppressing virus

People living with HIV need access to treatment with a combination of drugs known as antiretroviral therapy to suppress the virus, preserve their health, and prevent transmission of the virus to an HIV-negative partner. Staying on anti-retroviral therapy continuously is crucial to keep the virus suppressed.

But the virus can mutate into a resistant form if treatment delivery is poor or patchy. As treatment activists, we have seen firsthand when antiretroviral therapy treatment is interrupted, people

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



living with HIV develop resistance to their regimen and become vulnerable to life-threatening bacterial and fungal infections — the primary causes of hospitalisation and AIDS-related deaths in the community.

Governments such as the Indian government have made considerable advances in providing access to testing and antiretroviral therapy (ART) for people living with HIV. While there has been a reduction in AIDS-related deaths since 2004, progress has stalled in recent years, highlighting the need to address health system challenges such as disruptions in the medicine supply chain to end AIDS.

The disruptions in the life-saving HIV medicine supply chain are not new. What drives these widespread reoccurring shortages in the last decade affecting many States is the failure of the pooled procurement mechanism. The National AIDS Control Organisation (NACO) under the Ministry of Health and Family Welfare is the nodal agency responsible for overlooking and coordinating activities of the National AIDS Control Programme (NACP) along with the Central Medical Services Society, which is responsible for centralised tendering and pooled procurement of different HIV products, including Antiretroviral drugs. The tender for pooled procurement of life-saving antiretroviral medicines has faced bureaucratic delays in 2014, 2017, and now again in 2022.

Lack of treatment

A few days ago, NACO, in its public communication, claimed that 95% of PLHIVs have not faced any shortages. But by its own admission, the current shortages affect 5% of 14.5 lakh people. People living with HIV report that ART centres are struggling to keep them on treatment.

PLHIVs receive a minimum “one month’s dose” from ART centres. Recently, they have had to make many trips in a month to get their pills, creating a chilling effect on adherence as poorer patients do not have the resources to travel frequently. Some have had their regimen changed due to the unavailability of certain ARVs and are worried if these changes are based on the World Health Organization’s guidelines and compromise their future treatment options.

Some PLHIVs have been asked to take multiple doses of pediatric formulations instead of adult formulations. As a result, the pill burden increases, and they worry that they may deprive a child living with HIV of their doses in the near future. And when pediatric doses are not available, adult pills are broken or crushed, resulting in uneven dosing and an unpleasant taste that children do not like to take, making adherence challenging for caregivers.

The peaceful dharna in the NACO office seeks to get government attention on the timely tendering and procurement of HIV medicines and to hold accountable the health ministry’s procurement agency, the Central Medical Services Society, responsible for ARVs tenders to ensure an uninterrupted supply of life-saving treatment.

Shortages of health products in the supply chain of health programmes are not India’s problem alone and are commonly experienced in low- and middle-income settings. However, India has IT-enabled and community monitoring tools at its disposal.

Necessary actions

What is urgently needed is the political will from the Ministry of Health to take necessary measures to ensure that drug shortages, as happened over the last decade, are not experienced by its programmes, such as HIV and TB, in the future.



If ignored, the consequences impact the right to health and drive drug resistance, a significant public health challenge for the country.

THE ELUSIVE AMRITA

The earliest story of the grand churning of the ocean of milk, samudra-manthan, for the nectar of immortality, amrita, is found in the Mahabharata. But strangely there are more images of this mythological episode in Southeast Asian temples than in India. There is no artwork in India to match the grand Angkor Wat corridor in Cambodia that shows devas and asuras holding the serpent-king Vasuki with Vishnu overseeing the entire enterprise. At Bangkok's Suvarnabhumi airport one finds Vasuki (or Adi Sessa) take the shape of a Chinese dragon. In India, at best, we find images of Vishnu as Kurma, the turtle, on walls of Vishnu temples, despite the widespread popularity of the story. This may have something to do with the ambiguous relationship that Indian philosophy has with the idea of immortality.

The Buddha was clear that nothing in this world is permanent. There is no concept of a permanent soul either. Jains insisted that every organism has a permanent soul (jiva). Hindus went a step further and said besides a soul (jiva-atma) in every organism, there is a cosmic soul (param-atma) animating the whole world. But the idea of amrita is different from atma. Amrita is about the immortal and youthful body; atma is about the unseen, formless, tranquil spirit.

In the Puranas, when an asura asks Brahma for the boon of immortality, he is told that it is one boon that cannot be given. So the asura asks for a boon by which he seeks to outsmart death and make himself near-immortal. He fails, of course. There is always a loophole, something the demon forgets to ask protection from. Ravana is killed by a human; Mahisha by a woman; Taraka by a child. Everyone has a vulnerable spot.

A threatened swarga

We are told that only the devas are blessed with amrita; they never grow old, they never die. But their luxurious life in swarga is constantly threatened by relentless attacks by asuras. Eternal life does not seem to be accompanied by eternal joy. Is there a message here?

In a later version of the story of churning the ocean, we are told that Lakshmi disappears from swarga when Durvasa insults the hedonistic Indra. To churn her out, this enterprise is planned. The asuras serve as the counterforce. These enemies of the devas agree only because they are offered a share of the fruits of labour. But when amrita appears, the asuras are tricked and denied their share. Devas become immortal, not the asuras. A story of injustice that is often quoted in anti-caste circles to illustrate Brahmanical trickery.

But that is only half the story. The asuras have Shukra as their guru and he has access to sanjivani vidya that resurrects dead asuras. Asuras may not be immortal; but they can regenerate themselves and trouble devas endlessly. The authors of these stories insist that devas cannot be all-powerful and eternally successful, even if they have amrita.

In the story of samudra-manthan, Vishnu takes the form of Mohini and offers to distribute amrita fairly between devas and asuras. Enchanted by her beauty, both parties agree. Since the enterprise was initiated by devas, she begins by serving devas first. But one asura named Svarbhanu doubts Mohini's intention and sits among the devas as one of them. The sun and the moon identify him and Vishnu immediately cuts off Svarbhanu's head.



The samudra-manthan is also equated with the turning of the year. When the devas are pulling, it is Uttarayana, when the days get longer and warmer. When the asuras are pulling, it is Dakshinayana, when days are getting shorter and colder. This is not a tug-of-war; this is manthan, a churn, where the devas and asuras have to collaborate, pull while the other pauses. Only collaboration generates amrita, seems to be the message.

Vishnu splits the world by placing devas above the sky and asuras below the earth in patala. Here, in the subterranean realm, sprouts every seed. From here springs water, metal, and gem. That is why Lakshmi is called Pulomi, the daughter of the asura-king Puloman. She emerges to become Vishnu's wife, Sachi, during harvest time and returns to her father's house during sowing season.

When Lakshmi finally appears from the ocean of milk, she chooses as her husband not Indra, the king of devas, but Vishnu. Indra, the supreme deity of the Veda, is a junior deity in Puranas. He constantly fights asuras and is insecure about his position. He lacks the confidence, contentment, and grace of Vishnu. But she always comes back to Vishnu, as only he always upholds dharma. Her repeated return turns Vaikuntha into the ocean of milk, a realm of abundance.

By placing Vishnu above Indra, the collaborator is celebrated over the competitor. By placing Vaikuntha above swarga, the scriptures are positioning the spiritual above the material. The spirit is eternal not the flesh, not the material world. The body decays and dies. The world rises only to fall.

Distinctly Indian

Later Hindu mythology has ideas of chiranjeevi, the immortals, perhaps the result of contact with Chinese monks who spoke of the eight Taoist immortals of the Jade Heaven. But an analysis of the stories of Chiranjeevi reveals something distinctly Indian. They are a tool to make us realise how the quest for material permanence is futile, and only creates misery. Hanuman and Vibhishana have to watch how Ram eventually has to leave earth and return to Vaikuntha. Kripa and Ashwatthama have to witness how wars do not solve problems. Parashurama observes how kings do not change, despite threats of violence. Bali realises that generosity does not solve all human problem. Markandeya, saved by Shiva, has to witness how during pralaya everything in this world withdraws into Vishnu, awaiting a suitable time of for regeneration.

We build things for permanence. We believe in 'happily ever after'. Every deva feels the defeat of asuras is permanent. Every asura feels that the vanquished devas will never return. But they are always proved wrong. Nature balances the nectar of immortality, amrita, with halalal, the poison consumed by Shiva, and sanjivani that the asuras have access too. Every asura thinks he can cheat death but is invariably outsmarted.

As Yudhishtira told the yaksha when asked about the greatest wonder, 'Everyday people die but the rest live as if we are immortal.'

**BUSINESS & ECONOMICS****REINING IN OVERREACH**

The Central Board of Indirect Taxes and Customs (CBIC), through four different communiqués this week, has altered the enforcement processes for tax evaders in both customs as well as Goods and Services Tax (GST) matters. First, it significantly raised the monetary thresholds for initiating prosecutions and arrests under the Customs Act. Separately, the board laid down elaborate guidelines for GST officials before they exercise their powers to arrest and issue summons under the central GST law. While such norms were laid down for legacy laws governing taxes such as central excise, that are now subsumed into the GST, CBIC felt the need to issue fresh guidelines. The summons checklist, for instance, takes note of routine issuance of summons to top officials of firms even for procuring records available on the GST portal, and specifies that CXOs and MDs of any firm must not 'generally' be summoned in the first instance, but only when their involvement in tax evasion is clearly indicated. An approval process that requires officers to record reasons for issuing summons has been mooted to ensure that the power is exercised judiciously, even as they have been advised to consider where simple letters may suffice.

The norms spelt out for arrest and bail for GST offences, that stem from a Supreme Court judgment, are far more exhaustive and aimed at preventing 'routine and mechanical' arrests. The pre-requisites laid out before an arrest include the availability of credible evidence of wrongdoing as a starting point. However, approvals to arrest would hinge on whether the intent to evade tax or wrongfully avail tax benefits is evident and mens rea or guilty mind is palpable. Mere disagreements on interpreting a tax levy should not result in an arrest, the Board has said, underlining that the power to arrest must be exercised carefully as it impinges on personal liberty. Although the CBIC took a year to respond to the apex court's conclusion that an arrest must not be made just because it can be made, its latest diktats will assuage discomfort among GST payers about tax terror of a new variety. While the GST Council will continue to navigate the remaining clean-up of exemptions and inverted duty structures and revamp of the messy multiple tax rates with an eye on ramping up revenues from the still-evolving tax regime, easing its compliance hassles is equally critical. Taxpayers and officials can always differ on what the fine print means, and oversights or mistakes may crop up in filings that may not necessarily be mala fide. Distinguishing these from genuinely evasive ploys of a few taxpayers, and following a well-reasoned process to prosecute those who err by design, will go a long way in making the GST a truly Good and Simple Tax for businesses rather than a fresh fear factor to fret over.

INFLATION TARGET BREACH: RBI COMMITTEE WILL MEET TO DRAFT REPORT FOR GOVT

The Reserve Bank of India will call a special meeting of its Monetary Policy Committee (MPC) after October 12 to discuss a report it will have to submit to the Union government explaining the reasons for the average retail inflation remaining above the upper tolerance limit of 6 per cent for three consecutive quarters.

The Union government, in consultation with the RBI, fixes the inflation target for the central bank every five years. It had fixed it at 4 per cent plus/ minus 2 per cent (upper limit 6 per cent, lower limit 2 per cent) for the period August 5, 2016 to March 31, 2021, and retained it for the next five years ending March 31, 2026.



With the political class over years realising that inflation or price rise hurts the poorest the most and also adversely impacts growth in the long run, the Union government decided to provide a statutory basis for implementing inflation targets by the RBI. A monetary policy framework was signed between then RBI Governor Raghuram Rajan (on behalf of the RBI) and then Finance Secretary Rajiv Mehrishi (on behalf of the President) on February 20, 2015. The RBI Act, 1934, was amended in May 2016, giving effect to this framework agreement.

The framework agreement requires the RBI to submit a report to the Union government if it is in breach of the inflation targets for three consecutive quarters. In eight years, this will be the first time the RBI would have let retail inflation slip beyond the upper tolerance limit of 6 per cent for three straight quarters.

The average retail inflation in January-March 2022 and April-June 2022, according to data released by the National Statistics Office, was 6.34 per cent and 7.28 per cent, respectively. In July this year, it stood at 6.71 per cent. The data for August and September is scheduled to be released on September 12 and October 12, respectively.

While the RBI will be fully informed about retail inflation for all three quarters only by October 12, the CPI-based inflation is expected to remain above the 6 per cent upper limit in the July-September quarter too. In its August 5, 2022, monetary policy statement, the RBI's retail inflation outlook for July-September was 7.1 per cent. For the next two quarters, it was 6.4 per cent (October-December 2022) and 5.8 per cent (January-March 2023), respectively.

Managing inflation is key

The RBI has multiple roles, but it's accountable for one primary objective — keeping inflation within a flexible range of 2 per cent to 6 per cent. If it fails, the RBI Act, through the monetary policy framework, requires it to explain why it couldn't stick to the target, propose remedial actions to bring it down to 4 per cent, and also provide an estimate of the time-period within which the target would be achieved. These would be presented in a report to the Union Ministry of Finance. The sources said, it would be up to the government to make the RBI report public. The special meeting of the MPC would discuss the RBI report before it is submitted. The MPC, chaired by Governor Shaktikanta Das, has five more members. They are Michael D Patra, Deputy Governor (RBI), Rajiv Rajan, Ashima Goyal, Shashank Bhide and Jayanth Varma.

DIGITAL LENDING

The story so far: On August 10, the Reserve Bank of India (RBI) instituted a framework for regulating the digital lending landscape in the country. It pointed to concerns such as unbridled engagement of third parties, mis-selling, breach of data privacy, unfair business conduct, charging of exorbitant interest rates, and unethical recovery practices bothering consumer confidence and said that they had to be mitigated. The latest set of regulations are based on recommendations received from its Working Group on 'Digital Lending including lending through online platforms and mobile apps' (WGDL) which was constituted last January.

What is the digital lending landscape like?

Digital lending utilises automated technologies and algorithms for decision making, customer acquisition, disbursements and recovery. Not only does it lower costs but also ensures speedy disbursement.



Lending Service Providers (LSPs) act in partnership with Non-Banking Financial Companies (NBFCs) who disburse credit (or a line of credit) to the customer using the former's platform, making it a multi-sided platform. In order to cement their presence in a space with multiple peers, LSPs often resort to reckless lending practices by endowing credit beyond a borrower's repayment capacity. The risk is mitigated by spreading it to all users by charging higher interest rates.

The absence of standardised disclosure and regulatory norms made it cumbersome to assess a participant's operational legitimacy. Between January and the end of February last year, there were about 1,100 lending apps available for Indian android users of which about 600 were illegal. They were either unregulated by the RBI or had NBFC partners with an asset size of less than ₹1,000 crore.

The space is largely dominated by NBFCs. Its customers particularly include small borrowers without a documented credit history and thus, not served by traditional financial institutions. Their product mix primarily imbibe on short-term loans, especially those which have shorter tenures of less than 30 days.

What are the new regulations?

The central premise is transparency. Lending must be carried out by entities that are either regulated by the RBI or possess permission to operate under a relevant law. Considering the large-scale outsourcing in the industry, this would also help address regulatory arbitrage.

The RBI has mandated that all loan disbursements and repayments are to be executed directly between the bank accounts of the borrower and the entity, eliminating the involvement of LSP's nodal pass-through account.

Henceforth, before executing the contract, lenders would have to inform the borrower in a standardised format about all fees, charges as well as the annual percentage rate (APR). The latter refers to the annual rate that is charged for borrowing a loan and is inclusive of processing fees, penalties and all other charges associated with it. This would also help borrowers make better comparisons with industry peers. Further, LSPs cannot raise the credit limit of their customers without prior consent.

Also, to address the need for a dedicated resolution framework, entities would have to appoint a grievance redressal officer. The ecosystem would also fall under the purview of the RBI's Integrated Ombudsman Scheme (RB-IOS) should the complaint not be resolved within 30 days of receipt.

Will data also have to be regulated?

Yes, all data collected by the apps should be "need-based" and must be with prior and explicit consent of the borrower. Users can also revoke previously granted consent. The information to be collected must be stated in the privacy policy during enrolment. Considering the multi-sided nature of the business, the RBI has put forth that user consent would be mandatory for sharing any personal information with a third-party. This regulation would also address concerns emanating from TechFin (companies that are primarily tech-based service providers, say e-commerce, and also offer financial services). They are known to leverage their existing user data from non-financial business to offer more suitable financial services, which may involve third parties and vice-versa.



CREDIT GUARANTEE PLAN EXPANDED TO AID HOSPITALITY, RELATED SECTORS

The Union Cabinet on Wednesday approved an enhancement of ₹50,000 crore in the Emergency Credit Line Guarantee Scheme (ECLGS), raising its limit to ₹5 lakh crore, with the additional amount set to be deployed for enterprises in the hospitality and related sectors that were hit hard by the COVID-19 pandemic.

As of August 5, loans of ₹3.67 lakh crore had been sanctioned under the ECLGS, which was introduced to provide guarantees for additional credit needs of businesses hit by lockdowns and disruptions since the onset of the pandemic in 2020.

The Cabinet decided that the additional amount of ₹50,000 crore would be made applicable to enterprises in hospitality and related sectors till March 31, 2023. This step had been announced in this year's Union Budget. "The enhancement is expected to provide much needed relief to enterprises in these sectors by incentivising lending institutions to provide additional credit of up to ₹50,000 crore at low cost," the Finance Ministry said in a statement.

The pandemic had adversely affected contact-intensive sectors, and demand has continued to be subdued for them even as other sectors have returned to the recovery path faster.

Justifying the need for interventions for such businesses' 'sustenance and recovery', the Ministry added that their revival was also necessary for supporting the overall economic rebound, taking into account their high employment intensity as well as their linkages with other sectors.

CENTRE RESTORES FARM LOAN INTEREST SUBSIDY AS RATES RISE

The Union Cabinet on Wednesday decided to restore the interest subvention on short-term agriculture loans to 1.5% for all financial institutions, including cooperative banks.

The Centre said the increase in interest subvention support required an additional budgetary provision of ₹34,856 crore for the period of 2022-23 to 2024-25.

Explaining the rationale behind the decision, Union Minister Anurag Thakur said as the Reserve Bank of India had recently increased the repo rate, an intervention was necessary to maintain the interest rate on short-term agriculture loans at 7%.

He said the Centre's support to banks for the interest subvention scheme was stopped in May 2020 as the banks were able to provide such loans at 7%.

"Thus, interest subvention of 1.5% will be provided to lending institutions (public sector banks, private sector banks, small finance banks, regional rural banks, cooperative banks and computerised primary agriculture cooperatives directly ceded with commercial banks) for the financial years 2022-23 to 2024-25 for lending short-term agri-loans upto ₹3 lakh to the farmers," the government said.

The Centre said the increase in interest subvention would ensure sustainability of credit flow in the agriculture sector as well as financial health and viability of the lending institutions, ensuring adequate agriculture credit in the rural economy.



“Banks will be able to absorb increase in cost of funds and will be encouraged to grant loans to farmers for short-term agriculture requirements and enable more farmers to get the benefit of agriculture credit. This will also lead to generation of employment.”

PRIVACY PRICK-POINT: IRCTC BID TO MONETISE PASSENGER DATA

In what raises questions of privacy over commercial use of railway passenger data, the Indian Railways Catering and Tourism Corporation (IRCTC) has chalked up plans to monetise its bank of passenger data for doing business with government and private entities.

IRCTC, the ticket booking arm of the Indian Railways, has floated a tender to empanel a consulting firm to prepare a road map to monetise the data. As per a PTI report, the tender may be withdrawn over privacy concerns given that a data protection Bill has not been finalised. However, at the time of publishing, the tender was still live on IRCTC's website.

According to the tender, customer data that could potentially be monetised includes passengers' name, age, mobile number, gender, email address, payment mode, “login/password”, among other things. The selected consultant will also have to segregate monetisable data, identify its market potential and prepare a final roadmap for the monetisation of this data. The Economic Survey 2021-22 noted that in FY21, Indian Railways carried 1.23 billion tonnes of freight and 1.25 billion passengers.

“IRCTC is a reservoir of huge amounts of digital data which opens several opportunities for IRCTC for monetisation. IRCTC wishes to leverage its data assets and market position to drive strong growth in revenues,” the Corporation said in the tender. “IRCTC envisages a revenue generation potential of Rs 1,000 crore through monetisation of its digital assets. IRCTC wishes to engage a consulting firm to help in identification, design, and development and roll-out of data monetisation opportunities.” Incidentally, the tender document says that the selected consultant should prepare the monetisation roadmap keeping in mind the “current Personal Data Protection Bill, 2018” along with other laws like the Information Technology Act, 2000 and EU's General Data Protection Regulation (GDPR).

It is to be noted that India currently has no data protection rules and a draft Bill was recently withdrawn by the government from Parliament.

The data protection Bill that IRCTC has mentioned in the tender document is not even the latest version of the Bill that was withdrawn. The Ministry of Electronics and IT (MeitY) did not respond to a query asking the potential privacy risks of IRCTC's proposal.

The proposal has drawn the ire of privacy activists who have complained that IRCTC is looking to monetise passengers' data in the absence of a privacy framework in the country. In a statement, Delhi-based digital rights group Internet Freedom Foundation said, “IRCTC, a government-controlled monopoly, must not prioritise perverse commercial interests over the rights and interests of citizens. And given the recent withdrawal of the Data Protection Bill, 2021, such monetisation becomes even more concerning”. It added that a “profit maximisation goal” will result in “greater incentives for data collection, violating principles of data minimisation and purpose limitation”.

Alerting the stock exchanges of its monetisation plan, IRCTC said that as a commercial entity, it explores business opportunities for new areas. “As other business tenders, this tender has also been floated merely to appoint a consultant,” it said, adding that “The consultant will guide IRCTC



and the Indian Railways on monetisation activities and advise on monetisation value of digital assets ... Further, being a government company, it is a regular practice to float tenders.”

The Indian Railways has previously explored monetising the vast amount of data it collects. In 2016, then Railways Minister Suresh Prabhu had said that the organisation was exploring the possibility of monetising its data, software and some of the free services provided by Indian Railways, such as PNR enquiry.

In the past, there have been efforts to monetise government data, at least two of which have been scrapped over privacy issues. In 2020, the Ministry of Road Transport and Highways scrapped its Bulk Data Sharing Policy, under which it used to sell vehicle registration data (Vahan) and driving licence data (Sarathi) to private and public entities. The policy was scrapped over potential misuse of personal information and privacy issues.

More recently, the MeitY had floated a draft India Data Accessibility and Use Policy that proposed that data collected by the Centre that has “undergone value addition” can be sold in the open market for an “appropriate price”. This draft was withdrawn after it faced severe criticism over its proposal to monetise government data.

UNDERSTANDING ETHANOL BLENDING

The story so far: Prime Minister Narendra Modi announced that India has achieved its target of blending 10% sugarcane-extracted ethanol in petrol, ahead of schedule. Addressing the nation from the Red Fort on the 76th Independence Day, he rooted for energy independence stating that, “we need to be Aatmanirbhar (self-sufficient) in our energy sector”. India is one of the world’s biggest oil importing nations.

What is ethanol blending?

Blending ethanol with petrol to burn less fossil fuel while running vehicles is called ethanol blending. Ethanol is an agricultural by-product which is mainly obtained from the processing of sugar from sugarcane, but also from other sources such as rice husk or maize. Currently, 10% of the petrol that powers your vehicle is ethanol. Though we have had an E10 — or 10% ethanol as policy for a while, it is only this year that we have achieved that proportion. India’s aim is to increase this ratio to 20% originally by 2030 but in 2021, when NITI Aayog put out the ethanol roadmap, that deadline was advanced to 2025.

Ethanol blending will help bring down our share of oil imports (almost 85%) on which we spend a considerable amount of our precious foreign exchange. Secondly, more ethanol output would help increase farmers’ incomes. The NITI Aayog report of June 2021 says, “India’s net import of petroleum was 185 million tonnes at a cost of \$55 billion in 2020-21,” and that a successful ethanol blending programme can save the country \$4 billion per annum.

What are first generation and second generation ethanols?

With an aim to augment ethanol supplies, the government has allowed procurement of ethanol produced from other sources besides molasses — which is first generation ethanol or 1G. Other than molasses, ethanol can be extracted from materials such as rice straw, wheat straw, corn cobs, corn stover, bagasse, bamboo and woody biomass, which are second generation ethanol sources or 2G.



While inaugurating the Indian Oil Corporation's (IOC) 2G ethanol plant last week, Mr. Modi referred to not only the prospect of higher farmer income but also dwelt upon the advantages of farmers selling the residual stubble — left behind after rice is harvested — to help make biofuels. This means lesser stubble burning and therefore, lesser air pollution.

How have other countries fared?

Though the U.S., China, Canada and Brazil all have ethanol blending programmes, as a developing country, Brazil stands out. It had legislated that the ethanol content in petrol should be in the 18-27.5% range, and it finally touched the 27% target in 2021.

How does it impact the auto industry?

At the time of the NITI Aayog report in June last year, the industry had committed to the government to make all vehicles E20 material compliant by 2023. This meant that the petrol points, plastics, rubber, steel and other components in vehicles would need to be compliant to hold/store fuel that is 20% ethanol. Without such a change, rusting is an obvious impediment.

Rajesh Menon, director-general of the Society of Indian Automobile Manufacturers says that the industry has committed to becoming E20 engine compliant by 2025, which means that engines would need to be tweaked so as to process petrol which has been blended with 20% ethanol.

Are there other alternatives?

Sources in the auto industry state that they prefer the use of biofuels as the next step, compared to other options such as electric vehicles (EV), hydrogen power and compressed natural gas. This is mainly because biofuels demand the least incremental investment for manufacturers.

Even though the industry is recovering from the economic losses bought on by the pandemic, it is bound to make some change to comply with India's promise for net-zero emissions by 2070.

What are the challenges before the industry when it comes to 20% ethanol blended fuel?

The Niti Aayog report points out that the challenges before the industry are: "optimisation of engine for higher ethanol blends and the conduct of durability studies on engines and field trials before introducing E20 compliant vehicles."

Sources say that the auto industry is in talks with the government to plan this transition. There are multiple issues at stake for this endeavour. Storage is going to be the main concern, for if E10 supply has to continue in tandem with E20 supply, storage would have to be separate which then raises costs.

What have been the objections against this transition?

Ethanol burns completely emitting nil carbon dioxide. By using the left-over residue from rice harvests to make ethanol, stubble burning will also reduce. The 2G ethanol project inaugurated last week will reduce greenhouse gases equivalent to about three lakh tonnes of CO2 emissions per annum, which is the same as replacing almost 63,000 cars annually on our roads. However, it does not reduce the emission of another key pollutant — nitrous oxide.

The Institute for Energy Economics and Financial Analysis (IEEFA) in a report in March talks about the inefficient land use in ethanol production. The report's author Charles Worringham said that we can use land far more efficiently by generating renewable power for EV batteries. For



example, to match the annual travel distance of EVs recharged from one hectare generating solar energy, 187 hectares of maize-derived ethanol are required, even when one accounts for the losses from electricity transmission, battery charging and grid storage.

The water needed to grow crops for ethanol is another debating point. An explainer in The Hindu in May states that for India, sugarcane is the cheapest source of ethanol. On average, a tonne of sugarcane can produce 100 kg of sugar and 70 litres of ethanol — meaning, a litre of ethanol from sugar requires 2,860 litres of water.

There has been, therefore, a move toward waste-based extraction, such as through coarse grains. But supply may still be a problem, though the Niti Aayog report sounds sanguine on this count — “the roadmap estimates ethanol production from domestic grains will increase a whopping fourfold by 2025.” The abnormally wet monsoon seasons may have helped in recent years to raise grain output, but in its August 2021 analysis The International Council on Clean Transportation (ICCT) is sceptical that those production increases can be sustained.

Mr. Worringham states that sugar cane would likely continue to be the primary source for ethanol even with the 12 planned farm waste — or 2G ethanol — distilleries. The first, inaugurated last week, has a capacity to produce 100 kilo litres a day, or 3.65 crore litres a year. The 2021 Ethanol Roadmap forecasts that an additional 800 crore litres of ethanol is needed annually to meet the target. He points out that “assuming the other 11 planned farm waste distilleries have similar rates of production, their combined input would barely produce 5% of the additional annual ethanol requirement.”

What about food security concerns?

Mr. Worringham also flags the impact on crop output meant for food and fodder. “There are already indications that more sugarcane is being grown and that the Government of India encouraged more corn production at the India Maize Summit in May, with its use for ethanol production cited as a reason for this push. Sugar and cane production that end up in the petrol tank cannot also appear on the dinner plate, in animal fodder, be stored in warehouses, or be exported. As was evident in India’s wheat harvest earlier this year, climate change-induced heatwaves are a worrying factor and can lead to lower-than-expected harvests with little notice,” he says.

Global corn, or maize, production is down, and this adds an incentive for India to try and export more. In France, the corn harvest has dipped 19%, and reductions in forecast production have been seen for at least seven other countries in Europe. U.S. production expectations have also been revised slightly downward.

“Given the uncertainty about future production, India may not find it easy to simultaneously strengthen domestic food supply systems, set aside adequate stocks for lean years, maintain an export market for grains, and divert grain to ethanol at the expected rate in coming years, and this is an issue that warrants continued monitoring,” he warns.

WHAT ARE THE FACTORS DRIVING THE INCREASE IN MILK PRICES?

A price hike of Rs 2 per litre of milk announced for all its markets by dairy giant Amul kicked in on Wednesday. Mother Dairy too has raised the price of milk in Delhi-NCR by the same quantum as Amul, and several other dairy companies across the country have signalled that they would follow suit.



In a statement Tuesday, Amul said that its price rise in the MRP comes to 4%, which is lower than the prevailing rate of inflation.

Explaining the reasons, it said: "This price hike is being done due to an increase in overall cost of operation and production of milk. The cattle feeding cost alone has increased by around 20% compared to last year. Considering the rise in input costs, our member unions have also increased farmers' price in the range of 8-9% over previous year."

Dairies across the country are reporting a shortfall of 8-10% in milk collection.

The reduction in milk yield has come on the back of rising cost of cattle feed.

Heavy rainfall in several parts of the country has resulted in lower green fodder yield, "Protein and mineral mixtures have also seen a rise in prices, which has increased the cost of cattle feed."

Disease in cattle

Some major milk-producing states have seen a rise in cases of disease among cattle. Lumpy Skin Disease, which leads to fall in milk output, has been reported in Gujarat, Punjab and Haryana.

Other factors

There has also been a rise in transport, logistics, manpower, and energy costs.

"Due to the rise in input costs, milk procurement rates have increased by 15-25% over the same time last year," Mitra added.

Demand-supply mismatch

The pandemic-hit dairy industry has reported a complete recovery. This year, the demand for liquid milk is also high compared to previous years. But most dairies in the country are short on their supply of skimmed milk powder (SMP) and white butter. Dairies have hinted at a further increase in milk prices before October, when production is expected to pick up.

HOW RAKESH JHUNJHUNWALA BUILT A NEW INVESTMENT NARRATIVE IN INDIA

The death of Rakesh Jhunjhunwala on Sunday (August 14) morning has left the investor fraternity in shock. Over the decades, Jhunjhunwala has not only been India's most celebrated investor, but also the foremost proponent of a narrative of successful and enthusiastic investing in the country.

He built the culture of equity investment in India.

In India, where equity investment is a recent phenomenon, and where retail investors have traditionally invested in bank fixed deposits and other small savings schemes, Jhunjhunwala emerged as a shining example of taking risks in equities.

His success encouraged retail investors to invest in the stock markets, which helped build the equity culture in the country. Such a culture is key for a developing economy — for companies to raise funds and invest in manufacturing and services, and crucial for the growth of the economy and the creation of jobs.

Rakesh Jhunjhunwala has been the role model for attracting retail investors to invest in equities for wealth creation.

He was the eternal bull on the stock markets.

Jhunjhunwala was regarded as the Warren Buffet of India — someone whose portfolio was keenly watched by investors and market participants. Investors looked at the companies that Jhunjhunwala picked up stake in, and they would queue up to do the same.

A recent example was his investment in Tata Motors in 2020 amid the pandemic — one of the first big investors to do so. Since then, the company has been on a revival path, and has seen major growth in sales. Its share has gone up nearly five times, and retail investors have followed Jhunjhunwala's lead to invest in the stock.



DreamIAS



LIFE & SCIENCE

WHAT IS CAUSING ARCTIC WARMING?

The story so far: On August 11, Finnish Meteorological Institute researchers published their study in the Communications Earth & Environment journal, concluding that the Arctic is heating four times faster than the rest of the planet. The warming is more concentrated in the Eurasian part of the Arctic, where the Barents Sea north of Russia and Norway is warming at an alarming rate — seven times faster than the global average. Other studies in 2021 (the American Geophysical Union) and in 2022 (Geophysical Research Letters) indicate that the Arctic amplification is four times the global rate. While earlier studies have proved that the Arctic is warming two or three times faster, recent studies show that the region is fast changing and that the best of climate models may not be able to capture the rate of changes and predict it accurately.

What is Arctic amplification? What causes it?

Global warming, the long-term heating of the earth's surface, hastened due to anthropogenic forces or human activities since pre-industrial times and has increased the planet's average temperature by 1.1 degrees Celsius. While changes are witnessed across the planet, any change in the surface air temperature and the net radiation balance tend to produce larger changes at the north and south poles. This phenomenon is known as polar amplification; these changes are more pronounced at the northern latitudes and are known as the Arctic amplification.

Among the many global warming-driven causes for this amplification, the ice-albedo feedback, lapse rate feedback, water vapour feedback and ocean heat transport are the primary causes. Sea ice and snow have high albedo (measure of reflectivity of the surface), implying that they are capable of reflecting most of the solar radiation as opposed to water and land. In the Arctic's case, global warming is resulting in diminishing sea ice. As the sea ice melts, the Arctic Ocean will be more capable of absorbing solar radiation, thereby driving the amplification. The lapse rate or the rate at which the temperature drops with elevation decreases with warming. Studies show that the ice-albedo feedback and the lapse rate feedback are responsible for 40% and 15% of polar amplification respectively.

What do the previous studies say?

The extent of Arctic amplification is debated, as studies show various rates of amplification against the global rate. Studies have shown that the Arctic was warming at twice the global rate prior to the beginning of the 21st century. With revised figures, the Inter-governmental Panel on Climate Change released a 'Special Report on the Ocean and Cryosphere in a Changing Climate' in 2019, which said that the "Arctic surface air temperature has likely increased by more than double the global average over the last two decades."

In May 2021, the Arctic Monitoring and Assessment Programme (AMAP) warned that the Arctic has warmed three times quicker than the planet, and the chance of the sea ice completely disappearing in summers is 10 times greater, if the planet is warmer by two degree Celsius above the pre-industrial levels. The report also said that the average annual temperature in the region increased by 3.1 degrees Celsius compared to the 1 degree Celsius for the planet.



However, recent studies have shown that the mean Arctic amplification saw steep changes in 1986 and 1999, when the ratio reached 4.0, implying four times faster heating than the rest of the planet.

What are the consequences of Arctic warming?

The causes and consequences of Arctic amplification are cyclical — what might be a cause can be a consequence too.

The Greenland ice sheet is melting at an alarming rate, and the rate of accumulation of sea ice has been remarkably low since 2000, marked by young and thinner ice replacing the old and thicker ice sheets. The Greenland ice sheet saw a sharp spike in the rate and extent of melting between July 15-17 this year. The unusual summer temperatures resulted in a melt of 6 billion tonnes of ice sheet per day, amounting to a total of 18 billion tonnes in a span of three days, enough to cover West Virginia in a foot of water.

Greenlandic ice sheet holds the second largest amount of ice, after Antarctica, and therefore it is crucial for maintaining the sea level. In 2019, this was the single biggest cause for the rise in the sea level, about 1.5 metres. If the sheet melts completely, the sea level would rise by seven metres, capable of subsuming island countries and major coastal cities.

The warming of the Arctic Ocean and the seas in the region, the acidification of water, changes in the salinity levels, are impacting the biodiversity, including the marine species and the dependent species. The warming is also increasing the incidence of rainfall which is affecting the availability and accessibility of lichens to the reindeer. The Arctic amplification is causing widespread starvation and death among the Arctic fauna.

The permafrost in the Arctic is thawing and in turn releasing carbon and methane which are among the major greenhouse gases responsible for global warming. Experts fear that the thaw and the melt will also release the long-dormant bacteria and viruses that were trapped in the permafrost and can potentially give rise to diseases.

What is the impact on India?

In recent years, scientists have pondered over the impact the changing Arctic can have on the monsoons in the subcontinent. The link between the two is growing in importance due to the extreme weather events the country faces, and the heavy reliance on rainfall for water and food security.

A study titled 'A possible relation between Arctic sea ice and late season Indian Summer Monsoon Rainfall extremes' published in 2021 by a group of Indian and Norwegian scientists found that the reduced sea ice in the Barents-Kara sea region can lead to extreme rainfall events in the latter half of the monsoons — in September and October. The changes in the atmospheric circulation due to diminishing sea ice combined with the warm temperatures in the Arabian Sea contribute to enhanced moisture and drive extreme rainfall events. In 2014, India deployed IndARC, India's first moored-underwater observatory in the Kongsfjorden fjord, Svalbard, to monitor the impact of the changes in the Arctic Ocean on the tropical processes such as the monsoons.

According to the World Meteorological Organization's report, 'State of Global Climate in 2021', sea level along the Indian coast is rising faster than the global average rate. One of the primary reasons for this rise is the melting of sea ice in the polar regions, especially the Arctic. The Arctic



amplification furthers the idea that “what happens in the Arctic does not remain in the Arctic” and can substantially affect tropical processes far south.

THE VULNERABILITIES IN APPLE THAT INDIA’S IT MINISTER HAS FLAGGED — AND WHY YOU MUST UPDATE YOUR IPHONE NOW

Apple has released operating system updates this week for iPhones, iPads, and Macs that look to fix two serious vulnerabilities that can potentially allow hackers to take complete control of the device.

What are these security flaws?

As per the security update report on the Apple website, an application may be able to execute arbitrary code with ‘kernel’ privileges. Kernel is the core of the code for operating systems. Gaining access to this could give the hacker unrestricted control over the hardware and software of an affected device.

The other flaw pertained to the WebKit, which is the engine that powers Apple’s Safari Internet browser and other apps. Apple said the WebKit bug could be exploited if a vulnerable device accessed or processed “maliciously crafted web content [that] may lead to arbitrary code execution”.

“Apple is aware of a report that this issue may have been actively exploited,” the company said.

What are zero-day flaws?

These are essentially loopholes in a particular software, the existence of which even its developer is unaware of. A zero-day vulnerability is detected only when an attack takes place exploiting one, or when companies discover them and issue fixes. Zero-day loopholes in WhatsApp and Apple’s iMessage have been used earlier to install spyware tools. Pegasus, the spyware developed by the Israeli company NSO Group, also used zero-day vulnerabilities.

What devices are affected by the latest flaws and what should users of these devices do now?

All iPhone models including and after iPhone 6S, all iPad Pro models, iPad Air 2 and later models, iPad 5th generation and later, iPad mini 4 and later, and iPod touch (7th generation) are affected. Among the computing devices, the Macs running macOS Monterey, and Apple’s Safari Internet browser available for macOS Big Sur and macOS Catalina need to be updated.

Apple has recommended immediately updating these devices to the latest software and OS versions that it has rolled out.

Why is it important to update devices?

According to TechCrunch, some successful exploits, such as those of the NSO Group’s Pegasus, use two or more vulnerabilities together to break through a device’s layers of protections. It’s not uncommon for attackers to first target a vulnerability in the device’s browser as a way to break into the wider operating system, granting the attacker wide access to the user’s sensitive data.

Software and hardware OEMs regularly release software updates to keep devices up to date with the latest security flaws and vulnerabilities. It is advisable to keep updating devices as soon as each update is available.



BUSTARDS ADAPT TO PRODUCE 2-EGG CLUTCH

The perceived beliefs and recorded observations of egg laying habit of Great Indian Bustard (GIB) have changed after the recent excessive rains in western Rajasthan. The critically endangered bird species has adopted an altogether new behaviour of giving clutch of two eggs at a time after getting additional protein diet during the monsoon season.

Environmentalists in Rajasthan have hailed it as a new record, as all experts had been reporting a clutch of single egg by GIB for more than a century. Scientists working on ex situ breeding of these endangered birds have discovered the new proclivity in Jaisalmer district's Desert National Park (DNP).

Four female GIBs laid two eggs at a time during the current rainy season in the DNP, while two others were observed laying clutches of two eggs each earlier in the 2020 season. Dehradun-based Wildlife Institute of India's (WII) scientist Sutirtha Dutta, who is leading the project for breeding of the rare species, told The Hindu that six nests with two eggs each had been detected so far in the DNP.

Dr. Dutta said 5% to 10% of the female GIBs had been detected in the past laying two eggs each, but the high incidence, with the signs of an evolving habit, had been observed for the first time. "The natural feed for birds gets produced in abundance whenever it rains excessively in DNP," he said. The rains exceeded 20 mm by mid-August in Jaisalmer district.

Aimed at preserving the GIBs whose population has reduced to less than 150 in the wild, the breeding project focuses on spatial prioritisation, risk characterisation and conservation management with the endangered species.

FRUIT FLY SPECIES

A fruit fly genome is not just made up of fruit fly DNA — at least for one fruit fly species. New research (Current Biology) shows that one fruit fly species contains whole genomes of a kind of bacteria, making this finding the largest bacteria-to-animal transfer of genetic material ever discovered.

The researchers used genetic long-read sequencing technology to show how genes from the bacteria *Wolbachia* incorporated themselves into the fly genome up to 8,000 years ago. The researchers say their findings show that unlike Darwin's finches or Mendel's peas, genetic variation isn't always small, incremental, and predictable.

Scientist Barbara McClintock first identified "jumping genes" in the 1940s like those that can move around within or transfer into other species' genomes.

To determine if the bacteria genes were functional and not just DNA fossils, the researchers sequenced the RNA from fruit flies specifically looking for copies of RNA that were created from templates of the inserted bacterial DNA. They showed the bacteria genes were encoded into RNA and were edited and rearranged into newly modified sequences.

An analysis of these unique sequences revealed that the bacteria DNA integrated into the fruit fly genome in the last 8,000 years, exclusively within chromosome 4, expanding the chromosome size by making up about 20% of chromosome 4. Bacterial genome integration supports a DNA-based rather than an RNA-based mechanism of integration.



RAISING THE DEAD

Wildlife and nature enthusiasts know all about the “miracle” at Yellowstone Park in north-western United States. In 1995, the grey wolf — which had been hunted to eradication by the 1920s — was reintroduced to the park. In the years and decades that have followed, not only has the wolf population flourished, the entire ecosystem — biodiversity, water bodies, other fauna — has been rejuvenated. The latest project by Texas-based company Colossal Biosciences (it is also trying to bring the woolly mammoth back) in partnership with the Thylacine Integrated Genetic Restoration Research Lab at the University of Melbourne wants to reintroduce — through gene editing and cloning — the extinct Tasmanian tiger. Clearly, it wants to recreate the success of Yellowstone Park. Unfortunately, it may end up becoming a poor copy of Jurassic Park.

The Tasmanian tiger, once widespread in Australia, was hunted into oblivion in the wild in the 1930s and the marsupial was declared extinct by the 1980s. Rebirthing extinct species through gene editing and cloning is certainly within the realm of the probable. But the likelihood of creating a viable population for the species to flourish is unlikely — as much because of the nature of the world today as scientific constraints.

The carnivore may not be hunted today, but its ecosystem could certainly come under threat — from climate change, careless tourists. Besides, there is no precedent for re-wilding a genetically-engineered animal. And perhaps most importantly, Colossal Biosciences, a profit-making enterprise, is spending about \$15 million on the project. A few Tasmanian tigers will be a money-making attraction and proof-of-concept. In Jurassic Park, too, profit was the driving force behind playing god. Remember how it ended?

MEGALODON: A GIANT TRANSOCEANIC PREDATOR THAT LIVED 23 MILLION TO 2.6 MILLION YEARS AGO

Using fossil evidence to create a three-dimensional model, researchers have found new evidence about the life of one of the biggest predatory animals of all time — the Megalodon. According to the new study published in the journal Science Advances, the Megalodon could “completely ingest, and in as few as five bites,” a prey as big as the killer whale.

As heavy as 10 elephants

According to the study, the Megalodon was bigger than a school bus at around 50 feet from nose to tail. In comparison, the great white sharks of the present can grow to a maximum length of around 15 feet. Using their digital model, the researchers have suggested that the giant transoceanic predator would have weighed around 70 tonnes — or as much as 10 elephants. Megalodons roamed the oceans an estimated 23 million to 2.6 million years ago.

Faster than the sharks of today

Using a previously established relationship between speed and body mass, researchers calculated that the Megalodon had an average cruising speed faster than sharks today. According to the research team, the Megalodon had the ability to migrate across multiple oceans.

3D modelling research

The technique was used as the Megalodon’s skeleton is made of soft cartilage that doesn’t fossilize well. Using fossils that were available, including mainly teeth and a rare collection of vertebrae



that has been with a Belgium museum since the 1860s, computer modelling was used to reconstruct the entire body of the extinct and largest known macropredatory shark.

“We completed the model by adding ‘flesh’ around the skeleton using a full-body scan of *Carcharias* (great white shark),” the researchers said.

HOW LACTOSE TOLERANCE IN HUMANS BECAME WIDESPREAD

Milk has often been branded as a superfood as it is rich in most of the nutrients necessary for health. However, how milk came to be an integral part of the human diet has been a conundrum to scientists because most of the world can't digest the product.

Studies on the global prevalence of this mutation suggest that 65% of humanity is lactose-intolerant, meaning they lack the gene to break down lactose into adulthood. Beyond the age of five, lactose, a sugar present in milk, cannot be naturally broken down in the stomach and this remains in the gut causing flatulence, acidity and diarrhoea.

India is among the largest producers of milk and, by country, the largest consumer and it stands to reason most Indians possess it. However, multiple studies have shown that only around 18-25% have it.

Milk drinking, the story goes, hasn't been very popular in the roughly 3,00,000-year history of humanity. But in the last 5,000 years, a genetic mutation enabled European pastoralists to produce lactase — an enzyme that breaks down lactose into a digestible form — well into adulthood, a trait called lactose persistence.

Genetic variant

Moreover, the genetic variant present in Indians is almost identical to that found in Europeans, meaning that it likely spread into India from migrant European populations. Thus, the standard story goes that something amplified the popularity of the genetic variant in Europeans and consequently in pockets of other continents.

Because evolution favours traits that confer benefits and eliminates those that don't, scientists have long sought to explain why the mutated lactose gene became popular. Was it because European pastoralists, who herded cows, continued to drink milk despite the obvious discomfort because it was otherwise a viable source of nutrition?

A recent study in the journal *Nature* reports a multi-pronged analysis that suggests drinking milk was actually harmful in those who lacked the gene-variant but only in periods of famine and adverse environmental conditions. Thus, the gene flourished because it likely killed the Europeans who lacked it.

Professor Richard Evershed, the study's lead author from the University of Bristol's School of Chemistry, assembled a unique database of nearly 7,000 organic animal-fat residues from 13,181 fragments of pottery from 554 archaeological sites to find out where and when people were consuming milk. His findings showed milk was used extensively in European prehistory, dating from the earliest farming nearly 9,000 years ago, but increased and decreased in different regions at different times.

“If you are healthy and lactase non-persistent, and you drink lots of milk, you may experience some discomfort, but you are not going to die of it. However, if you are severely malnourished and



have diarrhoea, then you've got life-threatening problems. When their crops failed, prehistoric people would have been more likely to consume unfermented high-lactose milk — exactly when they shouldn't," he said in a statement.

Therefore, the authors argue that as populations and settlement sizes grew, human health would have been increasingly impacted by poor sanitation and increasing diarrheal diseases, especially those of animal origin. Consuming milk under these conditions would have been harmful to those who lacked the digestive gene.

"This situation would have been further exacerbated under famine conditions when disease and malnutrition rates are increased. This would lead to individuals who did not carry a copy of the lactase persistence gene variant being more likely to die before or during their reproductive years, which would push the population prevalence of lactase persistence up," the authors note.

WHICH OILS TO USE, AND HOW MUCH: DO'S AND DON'TS OF CONSUMING FATS

Physicians often do not give patients specific advice on edible oils. Sometimes, casual advice is given: "Do not take fried foods." So a patient might think gleefully, "Well, that does not include putting a lot of butter on bread or plenty of ghee in daal or on rotis!" They might rationalise: how much harm can this 'little' amount do? And maybe present anecdotal evidence: "My grandfather used to take 100 g of ghee and butter daily and lived to be 95!"

I explain to these patients that longevity is a function of a balanced lifestyle, of which diet is only one component. "Your grandfather must have walked 10-15 km daily and eaten plenty of vegetables, fruits and fibre-containing food," I tell them. "If you consume the same amount of fat, it will burn your liver and heart very soon, given your lifestyle of little physical activity and uncontrolled diet."

What oils to consume, and how much, are both important.

On quantity, there is relatively less debate: about 3-4 teaspoons should be consumed daily, including the oil used in cooking. An entirely oil-free diet will do harm in the long run, since essential fatty acids in oils are required by the body. And beware, even if a particular diet is touted to be "zero cholesterol", it is likely to contain toxic ingredients within.

One component of fats, monounsaturated fat (oleic acid), when consumed instead of other fats, was highly effective in reducing blood fats and medication in patients with diabetes.

While this type of fat is abundant in olive oil and canola oil, we in India have used a similar oil, mustard, for centuries. Other rich sources of monounsaturated fat are avocados, pistachios, walnuts, almonds and sesame.

The astounding success of Mediterranean diets in improving almost all health parameters besides improving the condition of diabetics, averting heart disease, and increasing lifespan, could be due to the use of olive oil among other healthy food — nuts, which are rich in monounsaturated fats, and vegetables.

The second type of 'good' fat is polyunsaturated fat — one example is omega-3 fatty acids, of which fish are a rich source. However, many Indians do not eat fish; and fish is often not easily available in several parts of the country, and could be contaminated, for example with mercury.



In general, levels of these fats are low in the blood of Indians, impacting blood fat levels and heart health adversely. Unfortunately, there are not many vegetarian sources of these good fats — walnuts, mustard oil, soybean, sesame, peanuts, canola oil, flaxseeds, chia seeds contain relatively small amounts of omega-3 fatty acids.

Ghee and coconut oil

The intake of saturated fats carries an extremely high risk of arterial clogging and heart attacks, even though some recent opinions vary. A particularly adverse component of saturated fats is palmitic acids, a major component of palm oil and dairy ghee, which could, besides acutely increasing the risk of heart disease, also lead to the growth of cancer cells.

Taking even one meal full of saturated fat could lead to an explosive break of fats deposited in arteries (“plaque rupture”), which can stop the precious flow of blood to the brain, heart, or anywhere else in the body within seconds. Unfortunately — contrary to our traditional belief that it is good for strength and the heart and lubricates joints, and our emotional attachment to it — dairy ghee is replete with saturated fats (60%-80%) and palmitic acid.

There aren't too many robust scientific studies on ghee, but one study shows that a daily intake of even 1-2 teaspoons can increase the risk of heart attack more than tenfold. There are animal studies showing that ghee increases the risk of kidney damage and lung cancer as well. A few studies that point to the good effects of ghee on memory, weight, etc., are small and scientifically lightweight.

Coconut oil, which is widely used in the southern states, too is rich in saturated fats and palmitic acids. It has been found to raise bad blood cholesterol (LDL), the prime determinant of artery blockages, in six out of seven good studies done till date. It appears that many people do not believe that coconut oil does any harm to the body, basing their opinion mostly on small and poorly executed studies with poor scientific validity.

Bhujias and chips that are widely available in India are made in saturated fat-laden palm oil. Interestingly, similar snacks and munchies manufactured by the same multinational companies for markets such as the United States, are often made with healthier oils. All saturated fats get deposited in the liver, causing its shrinkage (fibrosis and cirrhosis), something we have seen increasingly. We need better and more robust research data — and until then, we should decrease the intake of these oils.

The worst of the lot: trans fats

One up on saturated fat for increasing heart and liver risks are trans fatty acids, which are abundant in vegetable ghee — vanaspati and similar oils. (Vanaspati ghee is partially hydrogenated vegetable oil made from vegetable sources; it is different from dairy ghee.)

High amounts of trans fatty acids (which make up 30%-40% of some oils) are highly injurious to the heart, liver, pancreas, and blood arteries. Indeed, this is the most damaging component of oil. Our research shows that if you reheat foods at high temperatures in any oil, the levels of trans fatty acids increase by 100%-200%. These cooking practices are common in Indian households, and are uniformly adopted by street vendors and most food establishments.

So, how do you stay healthy? You should keep your eyes open, and scan nutrition labels for the quantity of saturated fats, palm oil, and trans fatty acids. You should consume more fresh fruit and



vegetables, and use limited quantities of healthy oils in rotation and in combination. You should try not to reuse and reheat any oil.

In the polluted atmosphere that we live in, you certainly deserve one less poison.

A HEART ATTACK WHILE EXERCISING – WHY IT HAPPENS AND WHO IS AT RISK

Comedian Raju Srivastava suffered a heart attack on August 10 while working out in a gym. Over the years, there have been reports linking strenuous physical activity to sudden cardiac death. Does high-intensity exercise raise the risk of a heart attack?

What causes a heart attack?

Heart attacks are caused when there is a sudden blockage in the coronary arteries supplying blood to the heart muscle.

“Chronic obstruction of 70 per cent or more in a coronary artery produces angina or chest pain on exertion, since available blood supply does not meet the increased oxygen demand during exercise. However, a heart attack (acute myocardial infarction) can also occur when soft plaques that form in the coronary arteries rupture and cause a large clot to form. This may come without any prior warning symptoms. Even plaques of 30 per cent can rupture and lead to the formation of a large obstructive clot,” said Prof K Srinath Reddy, a cardiologist, epidemiologist, and president, Public Health Foundation of India (PHFI).

A common misconception is that a blockage results from deposits of fat (lipids, cholesterol) and cells on the artery wall — similar to blocks in household plumbing. This is incorrect, according to Dr Tushar Gore, managing director, Resonance Laboratories.

“The blockages are a result of cells and cholesterol particles breaking through the barrier of endothelial cells and infiltrating the lining of the artery. As a result, there is a bump in the artery wall — like a pimple. This is known as plaque or stenosis. The plaque need not bulge into the artery but could protrude outwards as well... Break-up and disruption of such blockages inside the coronary artery initiates blood clotting mechanisms to ‘repair’ the injury from plaque disruption,” he says.

What causes cardiac death during exercise?

Sudden cardiac death during strenuous physical activity occurs more often in cases where blockages are undiagnosed, and sometimes in the background of a known diagnosis.

Vigorous exercise can also cause plaque rupture or trigger electrical disturbances in the heart leading to cardiac arrest, Dr Reddy said.

Dr Suman Bhandari, Visiting Consultant, Interventional Cardiology, Fortis Escorts Heart Institute, says: “If a patient is revived in such a situation, he or she stands a better chance as compared to sudden cardiac arrest at rest where the heart is usually weak (heart failure).”

This does not mean exercise is bad for the heart. “It is essential to detect and control the risk factors which build and rupture plaques in the coronary arteries. Care and caution are all the more needed in Indians who have an ethnic susceptibility to experiencing a heart attack at younger ages than other population groups,” says Dr Reddy.



Can diagnostic testing help?

To identify risk, three things need to be detected: presence of small plaque; likelihood of plaque disruption (known as vulnerability); and the clotting intensity of blood. Reliable non-invasive diagnostic tests are available only for the first — detection of small plaque. Nevertheless, testing (even if it were to be available) for each of these will not offer a guaranteed window into the future because all the three factors change depending on lifestyle and environmental conditions.

CORNEAS BIOENGINEERED FROM PIG COLLAGEN CAN RESTORE SIGHT, STUDY FINDS

Damage to the cornea — the clear, outermost layer of the eye — is one of the leading causes of blindness across the world, leaving approximately 12.7 million people blind, and particularly affecting those in poorer countries where there is a scarcity of donated human corneas.

For the first time, researchers in Sweden have been able to create a successful alternative — bioengineered cornea implants made of collagen derived from pig skin. The implant was used to successfully restore the vision of 20 people in India and Iran, most of whom were blind due to keratoconus, a disease that leads to thinning of the cornea. The findings were published in the journal *Nature Biotechnology* on August 11.

Researchers claim that there is a severe shortage of corneas, with only one available for 70 patients. Logistical and storage difficulties, along with expensive surgical equipment, further burden those living in low- and middle-income countries in Asia, Africa, and the Middle East.

As a substitute for human corneas, the researchers utilised medical-grade collagen derived from pig skin, a byproduct of the food industry that is already used in medical devices for glaucoma surgery. This is not only cheaper and easier to access than donated corneas, but requires a less invasive procedure and can be stored for a significantly longer period — up to two years, the study notes.

The researchers developed a minimally invasive method without the use of stitches, where a small incision is made in the patient's eye, and the implant is inserted over the existing cornea. This can be done with high-precision lasers or by using readily available surgical instruments.

This new method was used by surgeons in India and Iran, where there is a lack of donated corneas. Not only was the procedure safe for all 20 participants, the researchers found that 2 years after the operation, none of the patients were blind anymore. Furthermore, 3 of the Indian participants who had earlier been blind, had perfect (20/20) vision after operation. The researchers said they want their method to be affordable for everyone.

“The results show that it is possible to develop a biomaterial that meets all the criteria for being used as human implants, which can be mass-produced and stored up to two years and thereby reach even more people with vision problems,” said Neil Lagali, Professor of Experimental Ophthalmology at Sweden's Linköping University, one of the researchers behind the study.

IT IS GOOD TO LEAN RIGHT WHILE YOU POP THAT PILL, HERE'S WHY

Is there a right way to take your pills to ensure quick results? A new study by researchers from Johns Hopkins University has found that popping a pill while leaning towards the right is the ideal posture to ensure fastest absorption into the bloodstream.



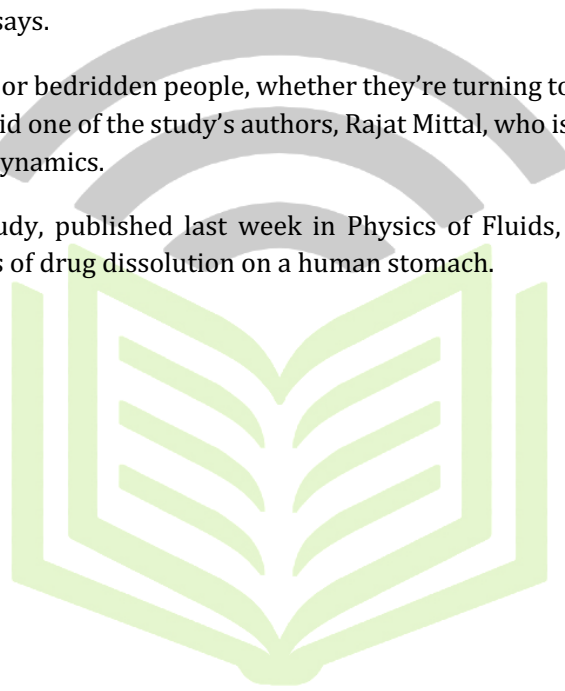
Oral medicines, which are considered safe, economical, and have a high degree of patient compliance, start working when they are absorbed into the blood through the intestine. But to get there, a pill needs to pass through the stomach. The lower part of the stomach — the antrum — is connected to the first part of the small intestine, the duodenum, through the pylorus, a valve that opens and shuts during digestion. A right posture ensures that the pill lands closer to the lower part of the stomach, which in turn helps in the stomach ejecting its contents into the intestine faster.

The team tested four postures — upright; leaning right; leaning left; and leaning back.

The team was surprised to find that if “a pill takes 10 minutes to dissolve on the right side, it could take 23 minutes to dissolve in an upright posture and over 100 minutes when laying on the left side”, the JHU website says.

“For elderly, sedentary or bedridden people, whether they’re turning to the left or to the right can have a huge impact,” said one of the study’s authors, Rajat Mittal, who is a Johns Hopkins engineer and an expert in fluid dynamics.

The findings of the study, published last week in *Physics of Fluids*, are based on a model to simulate the mechanics of drug dissolution on a human stomach.



DreamIAS