

*CURRENT
AFFAIRS FOR
UPSC*

3rd TO 9th January, 2021

DreamIAS



INTERNATIONAL

FRUITS OF INCITEMENT

If the history of nations is replete with ironies, nowhere were they more evident than in the U.S., when the “greatest nation on earth” became hostage to an ugly attempted coup led by a mob, bearing slogans of support for outgoing President Donald Trump. Hundreds of them stormed the Capitol building, as police appeared to be overwhelmed, and members of Congress, who were gathering to certify the results of the 2020 presidential election, cowered behind benches or were evacuated. Although the mob was eventually ejected, lawmakers went on to reconvene and formally certify the results, and Mr. Trump finally committed to an “orderly transition,” major social media platforms locked his accounts for violating their civic integrity policies, namely inciting violence with months of contentious posts that made baseless allegations about electoral fraud. The immediate trigger for the mob, said to have been methodically planned online via social media, was the surprise victory of two Democratic candidates, Raphael Warnock and Jon Ossoff, in the January 5 run-off election in Georgia. That election was necessitated by the fact that no candidate won 50% of the popular vote in the November 3 general election. Their win gives Democrats 50 seats in the Senate, which is tantamount to control of the upper chamber of Congress, because the incoming Vice-President, Kamala Harris, will cast a deciding vote in a tie. To say that the incoming and 46th U.S. President, Joe Biden, has a tough job on his hands after his inauguration on January 20, would be an understatement. The sheer viciousness of the January 6 mob attack, and more than two months of hateful vitriol online and offline following the 2020 election, is proof that political America is deeply polarised, brimming with anger and disenchantment at the ground realities. The “unprecedented assault” on the very soul of democracy (as Mr. Biden put it) has been in the making for more than four years. At the heart of the tsunami of angst that was evident throughout the election campaign is a sense of frustration that grips middle America, including the white middle class and blue-collar workers, over the inevitable changes to the U.S. economy and society. There is a view that the forces of immigration and globalisation have lit the fuses on this explosive combination of racial prejudice and economic insecurity. In reality, Mr. Trump’s strident rhetoric exploited this sense of alienation and socioeconomic dysfunction for narrow political and personal gains. Now Mr. Biden has an opportunity to strike a more balanced note by, on the one hand, seeking to revive the moribund spirit of bipartisan consensus and expediently tackling the thorny issue of comprehensive immigration reform, and, on the other, redressing the ills of runaway free-market liberalisation and forging a post-COVID-19 economic vision that can truly deliver on the American dream.

HANDOVER OF POWER SHOULD BE PEACEFUL

Handover of power to the Biden-Harris administration in the United States should be conducted in an “organised and peaceful” manner, India said on Friday. Prime Minister Narendra Modi had said on Thursday that the mob attack on the U.S. Congress had left him “distressed”. “The democratic process cannot be allowed to be subverted through unlawful protests,” Mr. Modi had said. The statements from the Indian side came even as some Indian flags carried by Indian-American supporters of President Trump were spotted among the crowd that attacked the U.S. Congress.



India, like other countries, is gearing up for the transition of power from the Trump administration to the Biden-Harris team, which will take over on January 20. An immediate issue of bilateral concern is likely to be *India's purchase of a \$400 million missile* defence system from Russia despite the U.S.' objection. Outgoing U.S. ambassador to India Kenneth Juster on January 5 spoke about the choices that India would have to make in going ahead with the deal, saying that punitive measures under CAATSA — Countering of America's Adversaries Through Sanctions Act — were not aimed at the friends and allies of the United States. Mr. Srivastava said that India conducts its foreign policy on the basis of choices made to safeguard its "national security interest". "India and the U.S. have a Comprehensive Global Strategic Partnership. India has a special and privileged strategic partnership with Russia. We pursue an independent foreign policy. This also applies to our defence acquisitions and supplies, which are guided by our national security interest," said Mr. Srivastava.

IN A FIRST, U.S. SENATE OVERRIDES TRUMP VETO

The U.S. Congress dealt Donald Trump a humiliating blow in his last days in office with the Senate voting overwhelmingly to override his veto of a sweeping Defense Bill — the first time lawmakers have done so during his presidency. By a lopsided vote of 81-13, well more than the two-thirds of the 100-member chamber required, the Republican-controlled Senate approved the \$740.5 billion National Defense Authorisation Act to fund the military for fiscal year 2021. The Democratic-led House of Representatives had voted 322 to 87 on Monday to override Mr. Trump's veto. Both houses of Congress had easily passed the legislation in early December by strong majorities, but Mr. Trump, citing a litany of objections, vetoed it on December 23.

Breaking with members of his party, Mr. Trump had criticised the Defense Bill on numerous grounds. He called it a "gift" to China and Russia and said it restricted his ability to lower troop numbers in Afghanistan, South Korea and elsewhere. Mr. Trump had bristled at language to rename military installations that currently honour leaders of the breakaway Civil War-era, pro-slavery Confederacy. He also insisted the Bill should include a repeal of a federal law, known as Section 230, that provides liability protection to Internet companies such as Facebook, Twitter and Google, which he regularly accuses of anti-conservative bias. House Speaker Nancy Pelosi hailed the "resounding rebuke" that both houses of Congress delivered by overwhelmingly overriding Mr. Trump's veto.

BIDEN PICKS SUMONA GUHA FOR KEY ROLE ON SOUTH ASIA AT NSC

The Biden-Harris transition team announced the appointment of Indian-American Sumona Guha to the role of Senior Director for South Asia at the National Security Council. Ms. Guha co-chaired the South Asia foreign policy working group on the Biden-Harris campaign, and was a member of the transition team. She will succeed the Trump administration's Lisa Curtis in the role. Ms. Guha, a former Foreign Service officer, has been a senior vice-president since mid-2018 at the Albright Stonebridge Group, whose chair is former Secretary of State Madeleine Albright. She has also worked at the U.S.-India Business Council and, prior to that, in the Secretary of State's Policy Planning Staff with responsibility for South Asia.



KERALITE WAVED TRICOLOUR AT CAPITOL STORMING

A video of someone waving the Indian tricolour amid the violent storming of the United States Capitol by supporters of U.S. President Donald Trump two days ago had led to much debate ever since. Now, it has emerged that one of the persons waving the tricolour was Vincent Xavier Palathingal, a Kerala-native, hailing from Kochi. Mr. Palathingal had put a detailed post on Facebook on Thursday, claiming that he was there to protest against a 'stolen election'. The post, in which he claimed that he was not part of the violence, has now been taken down following widespread criticism from people inside and outside Kerala against him for insulting the country by carrying the tricolour to a violent protest in which five people have died. Mr. Palathingal has been settled in the U.S. since 1992 after graduating in Civil Engineering from the Government Engineering College, Thrissur. A member of the State Central Committee of the Republican Party in Virginia, he said the Trump Supporters were expecting the Congress to hold serious debate on the election fraud by making this unprecedented move at the Capitol. "We had expected about 12 hours of discussion, where all the proof on the rigged elections could have been presented. All that was thwarted because of the violence. After it, the Republican people did not support Trump as they feared losing their name," he alleged. Mr. Palathingal recalled that he was a Democrat before and had voted for Barack Obama twice.

USTR SLAMS INDIA'S DIGITAL TAX, HOLDS OFF ON TARIFFS

Digital services taxes adopted by India, Italy and Turkey discriminate against U.S. companies and are inconsistent with international tax principles, the U.S. Trade Representative's office said on Wednesday, paving the way for potential retaliatory tariffs. USTR, releasing the findings of its "Section 301" investigations into the digital taxes, said it was not taking specific actions at this time, but "will continue to evaluate all available options." The probes are among several still open USTR Section 301 investigations that could lead to tariffs before President Donald Trump leaves office or early in the administration of President-elect Joe Biden.

'Tax impacts U.S. firms'

USTR has concluded the digital taxes imposed by France, India, Italy and Turkey discriminate against big U.S. tech firms, such as Google, Facebook, Apple and Amazon.com. In the latest report, the USTR also said the Indian, Italian and Turkish taxes were "unreasonable" because they are "inconsistent with principles of international taxation, including due to its application to revenue rather than income, extraterritorial application, and failure to provide tax certainty.

'Does not discriminate'

India on Thursday said the 2% equalisation levy does not discriminate against U.S. companies as it applies equally to all non-resident e-commerce operators irrespective of their country of residence, Press Trust of India reported. In a statement, the Commerce and Industry Ministry said the purpose of the levy is to ensure fair competition, reasonableness and exercise the ability of governments to tax businesses that have a close nexus with the Indian market through their digital operations. It also does not have extraterritorial application as it applies only on the revenue generated from India, the ministry said.



BUSINESS OF DIVERSITY

Germany's cabinet has approved a law that makes it mandatory for large listed firms in the country to have at least one woman on their boards. *The ruling Christian Democratic Union, which had so far resisted forcing the hand of private companies, said it gave in because of slow progress on gender equality in the boardroom. "Not many changes are made voluntarily," said a minister in the Angela Merkel government. Women make up only 12 per cent of management boards in Germany, behind countries such as the US (28.6 per cent), UK (24.5 per cent) and France (22.2 per cent). In 2015, it had legislated a 30 per cent quota for women on supervisory boards of listed companies, which, however, entailed only a non-executive role. Globally, studies have shown a rise in the number of women in leadership positions in companies. The question remains: Do legally binding quotas work or do they run the risks of state meddling in private enterprise? Germany's experience suggests that while expanding the pool of innovators, talent and perspectives is in the obvious self-interest of industries, the gender bias wired into corporate structures is what keeps the glass ceiling in place.* Countries that do better on gender parity than others — Norway, Sweden, Italy — set themselves either informal targets or commit to legal quotas. In India, SEBI regulations make it mandatory for listed firms to have at least one woman director on their boards. Despite that, the proportion of women board directors in Nifty 500 companies does not even touch 20 per cent, according to a report by Institutional Investor Advisory Services last year. Inequality, whether of gender, caste or income, is a systemic feature of many Indian institutions — and the private sector is no exception. Nor should it be exempt from the expectations of substantive equality. Though it has resisted pressures for affirmative action so far, it must get to work on mechanisms that ensure more women in the boardroom.

CHINA DENIES ENTRY TO WHO EXPERTS

The World Health Organisation (WHO) has said it was "very disappointed" that China had not allowed a team of international experts to go ahead with a visit to study the origins of COVID-19 that was planned for this week. China's decision to not permit the trip appeared to come at the last minute and catch the WHO by surprise, with some of the experts already having left home and in transit when told the visit would not take place. WHO Director-General Tedros Adhanom Ghebreyesus said he was "very disappointed" the visit could not go forward. "Today, we learned that Chinese officials have not yet finalised the necessary permissions for the team's arrival in China," he said in Geneva. The comments marked a rare instance of the WHO head expressing some displeasure with China's government, which he has consistently praised from the start of the pandemic.

Beijing on Wednesday defended its decision to delay the visit. Foreign Ministry spokesperson Hua Chunying said the issue of origin-tracing was "very complicated". "To ensure the work of the international expert team in China goes smoothly, we have to carry out necessary procedures and make relevant arrangements," Ms. Hua said, adding that China had in February and July last year invited WHO experts to come to China on the issue of tracing origins. The WHO, however, said in December it had been granted permission for a visit of a team of 12-15 experts this month to study the origins of the outbreak. But how much the investigation will be able to achieve and how much access the team will have, more than one year after the coronavirus outbreak began in Wuhan, has been debated by experts. Chinese authorities have suggested they will exert control over how much access international scientists will have and have also controlled research within China on the origins. In recent weeks, *the State media in China has increasingly backed a narrative suggesting*



the virus came to China from elsewhere. Chinese scientists have been told that any studies into the origins of the coronavirus will have to be vetted by the authorities, while some scientists in China have put forward studies suggesting the virus was circulating in other countries, such as Italy, before it came to China. One pre-print, later withdrawn, suggested the first human transmission took place on the Indian subcontinent. In November, Michael Ryan, the Executive Director of the WHO's Health Emergencies Programme, said it would be "highly speculative" for the WHO "to say that the disease did not emerge in China".

JACK MA 'MISSING' AMID CHINA'S CLAMPDOWN ON HIS BUSINESSES

Alibaba founder Jack Ma's absence from public view in the past two months, including missing the final episode of a TV show on which he was to appear as a judge, has fuelled social media speculation over his whereabouts amid a Chinese regulatory clampdown on his sprawling business empire. *China's highest-profile entrepreneur has not appeared in a public setting since a late October forum in Shanghai, where he blasted China's regulatory system in a speech that put him on a collision course with officials, resulting in the suspension of a \$37 billion IPO of Alibaba's Ant Group fintech arm.* The Financial Times reported on Friday that Mr. Ma was replaced as a judge in the final episode in November of a game show for entrepreneurs called Africa's Business Heroes. An Alibaba spokeswoman told Reuters on Monday that the change was due to a scheduling conflict, declining further comment. While news coverage of Mr. Ma's absence from public view triggered speculation on Twitter, which is blocked in China, it was not a significant trending topic on social media in mainland China, where sensitive topics are subject to censorship. Chinese regulators have zeroed in on Mr. Ma's businesses since his October speech, including launching an antitrust probe into Alibaba and ordering Ant to separate its lending business from its online payments division. "I think he's been told to lay low," said Duncan Clark, chairman of Beijing-based BDA China.

THE PURSUIT OF ASSANGE

The decision by a British district judge to block the extradition of Julian Assange to the U.S. on the grounds of his mental health is a temporary setback to America's efforts to try the WikiLeaks founder under its law on spying charges. While it is a small victory for his lawyers and supporters, their fight to prevent his extradition and secure his freedom is far from over. *Judge Baraitser has blocked his extradition only on medical grounds because she thought his possible detention in isolation in the U.S. would likely result in a suicide attempt. She rejected the defence lawyers' arguments that Mr. Assange's prosecution was politically motivated and violated his rights to free expression. She also observed that his conduct "took him outside the role of investigative journalism", agreeing with the U.S. authorities' assertion on WikiLeaks. Mr. Assange, who is wanted in the U.S. on multiple charges of breaking espionage laws and conspiring to hack a military computer, has repeatedly defended his organisation's operations, terming them public interest journalism. U.S. prosecutors allege that he helped former U.S. Army intelligence analyst Chelsea Manning crack an encrypted password and download classified information, the leaking of which endangered American intelligence sources. The Justice Department also claims that he had conspired with hackers to obtain classified information.* It is ironic that the U.S., which takes pride in its freedoms and commitment to protecting human rights, is relentlessly pursuing a man who *exposed some of the worst rights violations by the American military.* Until WikiLeaks released the classified documents that Ms. Manning downloaded, the world believed that the July 2007 killings of a dozen



Iraqis, including two Reuters staffers, happened in a firefight with a U.S. aircrew. But *video footage by WikiLeaks showed the aircrew laughing after they killed 12 innocent people*. WikiLeaks files also exposed the killings of hundreds of Afghan civilians by U.S. forces. These were incidents the U.S. had swept under the carpet, and *WikiLeaks had undoubtedly done public service, allowing the questioning of the conduct of war by the world's supreme military power. Instead of accepting its military's mistakes, the U.S. went after the messenger. In the U.S., sensitive or leaked information published by the news media is protected under the First Amendment, a reason why the Obama administration decided against prosecuting WikiLeaks. But the Trump administration reversed tack*. The new Biden-led government must rethink its predecessor's approach. It is unfortunate that a fresh bail application filed by Mr. Assange's lawyers was rejected by a British judge on Wednesday. The British legal system should take a benign view of his condition and cause.

CHINA WARNS OF ACTION AGAINST U.S.' DELISTING OF ITS TELCOS

China will take 'necessary measures' to safeguard the interests of its companies after the New York Stock Exchange began delisting three Chinese telecom firms that Washington says have military ties, the country's commerce ministry said on Saturday. *The NYSE said on Thursday that it would delist China Mobile, China Unicom and China Telecom following President Donald Trump's move in November to bar U.S. investment in 31 firms that Washington says are owned or controlled by the Chinese military.* "This kind of abuse of national security and state power to suppress Chinese firms does not comply with market rules," the Chinese Ministry of Commerce said in a statement. "It not only harms the legal rights of Chinese [firms] but also damages the interests of investors in other countries, including the United States." While the ministry said it would take action to protect its firms, it also called on the U.S. to put bilateral trade relations back on track. In its final weeks before President-elect Joe Biden takes office on Jan. 20, the Trump administration has stepped up its hard line stance against China. Relations between the two biggest economies have come under increasing strain amid a series of disputes over issues such as trade and human rights. The U.S. Commerce Department added dozens of Chinese firms to a trade blacklist in December, accusing Beijing of using its firms to harness civilian technologies for military purposes. Chinese diplomats have expressed hope that Mr. Biden's election will help ease tensions between the two countries.

IRAN STEPS UP URANIUM ENRICHMENT, SEIZES TANKER

Iran on Monday began enriching uranium up to 20%, well beyond the threshold set by the 2015 Vienna accord, at an underground facility and seized a South Korean-flagged oil tanker in the crucial Strait of Hormuz, further escalating tensions in West Asia between Tehran and the West. The announcement of enrichment at Fordo came as Iran's Revolutionary Guards seized MT Hankuk Chemi, alleging the vessel's "oil pollution" sparked the move. However, hours earlier, *Tehran said a South Korean diplomat was expected to visit in the coming days to negotiate the release of billions of dollars in its assets now frozen in Seoul.* The dual incidents come amid heightened tensions between Iran and the U.S. in the waning days of President Donald Trump's term in office. During Mr. Trump's tenure, the U.S. leader unilaterally withdrew from Tehran's nuclear deal with world powers in 2018 and set off months of tense episodes that increasingly strained relations between the countries. Iranian state television quoted spokesman Ali Rabiei as saying that President Hassan Rouhani had given the order for the move at the Fordo facility. *Iran's decision to begin enriching to 20% purity a decade ago nearly triggered an Israeli strike targeting its nuclear facilities,*



tensions that only abated with the 2015 atomic deal. A resumption of 20% enrichment could see that brinkmanship return as that level of purity is only a technical step away from weapons-grade levels of 90%. Israeli PM Benjamin Netanyahu criticised Iran's enrichment decision.

“Iran informed the agency of its intention to enrich uranium at a rate of up to 20% in its Fordow underground plant, to comply with a law recently passed by the Iranian Parliament,” an IAEA spokesperson told AFP. *According to the latest report available from the UN agency, published in November, Tehran was enriching uranium to levels greater than the limit provided for in the Vienna agreement (3.67%) but not exceeding the 4.5% threshold, and still complied with the Agency's very strict inspection regime.* But there has been turmoil since the assassination in late November of Iranian nuclear physicist Mohsen Fakhrizadeh. In the aftermath of the attack, blamed on Israel, hardliners in Tehran pledged a response and Parliament passed a controversial law calling for the production and storage of “at least 120 kg per year of 20% enriched uranium” and to “put an end” to the IAEA inspections intended to check that the country is not developing an atomic bomb. The Iranian government had opposed the initiative at the time.

ON NILE, A GRAND DAM DIVIDES AFRICAN NATIONS

Ethiopia, Sudan and Egypt agreed on Sunday to resume negotiations to resolve their decade-long complex dispute over the Grand Renaissance Dam hydropower project in the Horn of Africa. The latest round of talks comes six weeks after Sudan had boycotted the ongoing negotiations.

What is the dispute about?

The Nile, Africa's longest river, has been at the centre of a decade-long complex dispute involving several countries that are dependent on the river's waters. At the forefront of this dispute are Ethiopia and Egypt, with Sudan having found itself dragged into the issue. Spearheaded by Ethiopia, the 145-meter-tall (475-foot-tall) Grand Renaissance Dam hydropower project, when completed, will be Africa's largest. The main waterways of the Nile run through Uganda, South Sudan, Sudan and Egypt, and its drainage basin runs through several countries in East Africa, including Ethiopia, the portion where this dam is being constructed. The construction of the dam was initiated in 2011 on the Blue Nile tributary of the river that runs across one part of Ethiopia. The Nile is a necessary water source in the region and Egypt has consistently objected to the dam's construction, saying it will impact water flow. The long-standing dispute has been a cause of concern for international observers who fear that it may increase conflict between the two nations and spill out into other countries in the Horn of Africa.

Why can the dam cause conflict?

Given the dam's location on the Blue Nile tributary, it would potentially allow Ethiopia to gain control of the flow of the river's waters. Egypt lies further downstream and is concerned that Ethiopia's control over the water could result in lower water levels within its own borders. When Ethiopia had announced in 2019 that it planned on generating power using two turbines, Egypt had strongly objected. In addition, Egypt proposed a longer timeline for the project over concerns that the water level of the Nile could dramatically drop as the reservoir fills with water in the initial stages. Sudan's location between Egypt up north and Ethiopia down south has caused it to become an inadvertent party to this dispute. But that isn't all; Sudan too is concerned that if Ethiopia were to gain control over the river, it would affect the water levels Sudan receives.



Why does Ethiopia want this dam?

Ethiopia's goal is to secure electricity for its population and to sustain and develop its growing manufacturing industry. Addis Ababa anticipates that this dam will generate approximately 6,000 megawatts of electricity when it is completed, that can be distributed for the needs of its population and industries. Researchers believe that in addition to its domestic requirements, Ethiopia may be hoping to sell surplus electricity to neighbouring nations like Kenya, Sudan, Eritrea and South Sudan, that also suffer from electricity shortages, to generate some revenue.

What is happening now?

The latest round of talks between Ethiopia, Sudan and Egypt occurred through video conference due to the Covid-19 pandemic, with South Africa observing the proceedings in its role as the current head of the African Union's rotating council, in addition to other international observers. Despite previous talks, the point of contention hasn't changed: Egypt and Sudan are concerned about the filling and the operation of the dam. Ethiopia continues to insist that the dam is required to meet the needs of its population and has said that downstream water supplies will not be adversely affected. But this has done little to pacify both Egypt and Sudan, with Cairo saying that the dam would cut its water supplies — concerning for a country that depends on the Nile for approximately 97% of its drinking water and irrigation supplies. According to a DW report, Sudan believes that the dam will reduce flooding, but is concerned about the path forward if the negotiations end at a stalemate. Sudan's Water Ministry announced in a statement that this week's negotiations are crucial, "for the resumption of tripartite negotiations on Sunday, January 10 in the hope of concluding by the end of January."



FOREIGN AFFAIRS

BLACK AND GREY

The timing of Pakistan's arrest of Zaki Ur Rahman Lakhvi, the LeT operations commander, and linked to the 2008 Mumbai attacks, just ahead of the next meet of global watchdog, the Financial Action Task Force (FATF), has been greeted with scepticism in India. Whenever Pakistan has faced a decision on its "grey list" status, it has carried out similar actions that appear to be aimed more at ensuring a better outcome for itself at the FATF. Its arrest and conviction of Hafiz Saeed and other LeT leaders in terror-financing cases, the passing of anti-terrorism and money laundering laws in the Pakistan Assembly to bring them in line with FATF-mandated international norms, and the



publication of new lists of terrorists at various times, all timed before FATF reviews of Pakistan's status, have been cited as more of the same. *The FATF's Asia Pacific Joint Group is to meet in January to prepare recommendations for a final decision on Pakistan's status to be presented to the FATF plenary session in February. Pakistan was brought back onto the grey list in June 2018, and given a 27-point action plan list to be completed by October 2019. Since then, it received at least four reprieves, and was judged at last count to have completed 21 of 27 points, with six outstanding. The plenary session can choose one of three options therefore, in keeping Pakistan on the grey list, where it is subject to some financial restrictions, to downgrade it to the black list, where it will face stringent sanctions, or close the review and let Pakistan off the lists altogether.* Pakistan will now hope that its progress in the action plan and having key terror figures in prison earn it a reprieve. The fear for India is that if Pakistan earns that reprieve, it can reverse all its actions. India has watched the arrests of all these men and other terrorists on India's "most wanted" lists in the past, only to find that they are released on bail, or let off over prosecutorial lapses once the world's gaze is averted. Last month, a Pakistan court's decision to overturn the conviction of al Qaeda leader Ahmed Omar Sheikh Saeed, a terrorist India was forced to release during the 1999 IC-814 hijacking, for the 2002 murder of American journalist Daniel Pearl, shows how Pakistan's investigating agencies and judicial system treat terrorism. Hafiz Saeed has been convicted only of terror financing charges and faces concurrent sentencing of about six years at the most, as would Lakhvi, who faces similar charges, despite a long record in transnational terror attacks. Others like Masood Azhar continue to evade any kind of prosecution despite UN sanctions. For India and its battle to have Pakistan's establishment held accountable on this issue, the FATF grey listing (from 2012-2015 and 2018-now) is a necessary lever to keep that process going.

The FATF plenary outcomes had told Pakistan's government that it must demonstrate "effective implementation of targeted financial sanctions against *all [UNSC] 1267 and 1373 designated terrorists* and those acting for or on their behalf, preventing the raising and moving of funds, identifying and freezing assets, and prohibiting access to funds and financial services" and show effective prosecution against them as well. *At least 146 U.N. banned terrorists are Pakistani citizens, but India has been closely pursuing the prosecution of Hafiz Saeed, Zaki-ur-Rahman Lakhvi and Jaish-e-Mohammad chief Masood Azhar through international channels like FATF for their role in continuing terror attacks.*

Lakhvi was designated a terrorist on December 10, 2008 by the U.N. Security Council Sanctions committee (QDi.264) for directing the LeT operations in Chechnya, Bosnia, Iraq, Afghanistan and south-east Asia. Under pressure after the Mumbai attacks on November 26-28, 2008, Pakistani authorities had arrested Lakhvi, who was accused of training the 10 gunmen in Pakistan and directing their brutal actions in Mumbai that left 166 people dead, from a control room in Karachi. He was held at Rawalpindi's Adiala jail until he was granted bail, and released by the Lahore High Court in April 2015. India and the U.S. had protested the release, especially since Lakhvi was able to pay Pakistan Rs. 2 million (₹20 lakhs) as his bail amount, without providing evidence of his sources. The action against Lakhvi now is therefore understood to be ahead of the Asia-Pacific Joint Group later this month.

A MESSAGE TO COLOMBO

External Affairs Minister S Jaishankar's three-day visit to Sri Lanka was significant not for any specific outcomes but for what was achieved in political and diplomatic messaging by both sides. Jaishankar's reminder in Colombo that the 13th Amendment is essential to ethnic reconciliation



came at a time when powerful Sri Lankan politicians close to President Gotabaya Rajapaksa and his brother, Prime Minister Mahinda Rajapaksa, are calling for its scrapping. The cancellation of elections to the provincial councils, apparently due to a spike in COVID-19 cases, is being viewed as a first step towards this end. Jaishankar's message, that India still sees the 1987 amendment — the constitutional basis for the provincial councils — as central to addressing Tamil political aspirations came within days of a statement by the DMK's T R Balu, just as Tamil Nadu hits its election season, asking Prime Minister Narendra Modi to ensure that the provincial council system remains intact. Sri Lankan Tamils themselves no longer set that much store by India's or Tamil Nadu's pronouncements on their problems. Delhi's waning influence in Sri Lanka is an open secret. Yet, it would be a diplomatic and political embarrassment for the Narendra Modi government if the 13th Amendment was indeed abolished. Delhi's other challenge in Sri Lanka at this point is to operationalise a 2019 agreement to develop along with Japan a container terminal at Colombo Port, where China has a controlling stake in the adjoining Colombo International Container Terminal. The India-Japan-Sri Lanka agreement had triggered a strike at the port ahead of last year's parliamentary election, resolved only after assurances from the Rajapaksa brothers that it would not be handed over to foreign developers. During the EAM's visit, the prime minister and president sent out mixed signals amid calls not to let the port fall victim to geopolitical rivalries in the Indian Ocean. Sri Lanka, for its part, has two main demands from India at this time. One, it wants supplies of the anti-COVID vaccine. Its other request for a \$1 bn currency swap has been pending since last year. India has already said it will prioritise vaccine supplies to its neighbours and should have no problem in accepting Rajapaksa's request quickly on humanitarian grounds — it can only help Delhi's image in that country. As for the currency swap, its use as a bargaining chip can last only as long as Colombo does not look elsewhere for help.


DreamIAS



NATIONAL

YOUTH KILL ENDANGERED DOLPHIN IN U.P.

A video of a group of men and boys in Uttar Pradesh's Pratapgarh district beating to death a Gangetic river dolphin surfaced on social media on Friday. An endangered species, the Gangetic River Dolphin is recognised as the National Aquatic Animal. In the video of the incident, which took place on December 31, 2020, in the shallow waters of the Sharda canal near a village, a group of men and boys can be seen mauling the dolphin with axes and sticks. The group first trapped the dolphin with a net, following which one of them slammed the hapless creature with an axe. Others joined in with axes and thick sticks and held down the dolphin by its fin, while some locals punctured the dolphin with sharp objects leading to bleeding. The Pratapgarh police said they had arrested three persons and sent them to jail. Further legal action was being taken. In the FIR lodged at the Nawabganj police station against unknown persons, it was mentioned that a post-mortem on the dolphin was conducted. *Killing the Gangetic River Dolphin is a punishable offence under Section 9/51 of the Wildlife Protection Act, 1972*, the FIR said. The motive behind the crime is not yet known. On January 2, IFS officer Ramesh Pandey shared a link and photo of the incident and tweeted: "In an unfortunate incident a Gangetic Dolphin got killed by locals in Pratapgarh district of U.P. Locals thought the species a 'fish' which may be dangerous to their lives. Wildlife awareness is much needed for conservation."

LETTER & SPIRIT

The Supreme Court's approval, has cleared the decks for the Union government's ambitious Central Vista project. The court has been sober and circumspect in limiting itself to the legality of the case: "Political issues including regarding development policies of the Government of the day must be debated in the Parliament, to which it is accountable. The role of the Court is limited to examining their constitutionality." At the same time, the judgment delivers important messages. A 2-1 split verdict, it must be read in its entirety. For, the main verdict by Justices A M Khanwilkar and Dinesh Maheshwari as well as the dissenting note by Justice Sanjiv Khanna direct the project proponents to important imperatives: Respect for environmental and heritage norms and the salience of consultative processes. Indeed, as Justice Khanwilkar, writing for himself and Justice Maheshwari, points out: "The challenge (to the project) was premised on high principles of democracy and not limited to mere infringement of statutory provisions". As government agencies, planners and architects give shape to a new Central Vista, Tuesday's verdict underlines the sanctity of "participative processes" and "transparency in public institutions". The court talks about the government's need for a revamped enclave to house the country's highest legislative body and an integrated administrative block for ministries and departments. But it is also alive to the challenges such development poses to the environment — the two, it notes, "are not sworn enemies of each other". It asks for the creation of smog towns and deployment of smog guns to mitigate the pollution from construction materials and directs that waste management at the site be subjected to constant monitoring. But beyond these measures, it spells out the guiding principle: "Development ought to be sustainable with the idea of preservation of the environment for present and future generations". Ecology is a recurring concern in Justice Khanna's dissenting note as well, though he disagrees with his fellow judges on the credibility of environmental clearances obtained by the project. Quoting the Supreme Court's 2019 verdict in Hanuman Laxman Aroskar v Union of India, Justice Khanna notes, "Public consultation is not a mere



formality... Decisions which affect lives of people must factor in their concerns". He returns to the theme while referring to heritage-related concerns — Delhi's Heritage Conservation Committee was not consulted while framing plans for the revamped enclave, he says. "The primary grievance of the petitioners," the dissenting note points out, is "the lack of information and details". That the majority verdict too underlines the significance of transparency — "unless complete and relevant information... is placed in public domain, the public would be ill-equipped to engage with the Government in a meaningful manner" — should be a key takeaway for the government as it embarks on "this historic and iconic project".

SUPREME COURT CENTRAL VISTA JUDGMENT: WHAT THE PETITIONERS ARGUED

The Supreme Court on Tuesday gave its nod to the Central Vista redevelopment project in a 2:1 verdict. A batch of petitions had challenged the plan for demolition of old structures and new construction, including a brand new Parliament, on approximately 86 acres of land in the national capital.

What was under challenge, and what has the court held?

Broadly, the change in land use and the manner and procedure adopted for making the changes in the Central Vista precincts were challenged. The petitioners argued that there were irregularities in the process that involved approval of design, clearance on monetary allocations and the tendering processes, and other regulatory clearances on environment and from local municipal bodies. In its 2:1 verdict, the court has held that there are no infirmities in the approvals granted. Justices A M Khanwilkar and Dinesh Maheshwari held that the central government's change of land use for the project in the Master Plan of Delhi 2021 is also a lawful exercise of its powers.

How was the Master Plan modified?

The central government and the Delhi Development Authority are given the power to modify the Master Plan of Delhi that was notified in 2007 to guide the direction of development of the National Capital Territory until 2021. This was modified in March 2020 to include the Central Vista project. Sections of land are assigned for specific purposes such as recreation, government, public and semi-public, which were modified to accommodate the Central Vista project. The petitioners argued that change in land use was not really a "modification" and also raised concerns on the manner in which the permissions were granted.

How has the court ruled on this?

The court said the change is a "a case of minor modification" and "it is incomprehensible as to how the proposed changes could be termed as substantial enough to alter the basic identity of the plan or for that matter, of the zone concerned. The effect is negligible in contrast to the expanse of the zone". The court's view is based on the understanding that the changes will have to be looked at keeping in mind the whole plan and not just the zones in which the changes will be effected. For example, the proposed new Parliament is set to come up in Plot Number 2 of the Central Vista precincts which is currently a park. The land use for the plot was changed from recreation to government use. However, the court took the view that since the park has anyway been closed to the public for security reasons, the change in land use will not have any actual reduction of area available for public use. The ruling also noted that to compensate this change, the proposed



change in land use provides for recreational space at three different locations in the neighbourhood. The petitioners highlighted that the whole process involving multiple local bodies was completed in just three months — between December 2019 and March 2020 — during which public consultation was held, objections were invited, considered and overruled. The court held that “taking legitimate steps/actions swiftly and as per the timelines because of the nature of the proposal cannot be termed as having been done in haste”.

What were the processes challenged?

NO OBJECTION BY CVC: The petitioners had challenged the composition of the Central Vista Committee and therefore all the approvals granted by the body. They argued that the CVC was set up to rush the approvals and that the officials who were proponents of the central vista project were also entrusted with the CVC and there was an apparent conflict of interest.

APPROVAL BY DUAC: The petitioners had argued that the consultation with Delhi Urban Commission (DUAC) had to be completed at the plan conception stage itself. They argued that in the absence of a comprehensive consultation, the approvals were granted without proper application of mind. However, the government has stated that considering different stages for different components of the project, DUAC approval regarding the Parliament project has been obtained whereas the approval for rest of the Central Vista precincts shall be taken as and when the development activity thereat is proposed in future.

HERITAGE APPROVAL: The petitioners had argued that the government failed to consult Heritage Conservation Committee, which is an expert body in matters involving heritage structures and ought to have been consulted from the stage of conception of the project, even before the design is agreed upon.

ENVIRONMENTAL CLEARANCE: The petitioners had argued that the Expert Appraisal Committee (EAC) had no mandate to grant clearances because the Central Vista project was multi-sectoral and that the body had no expertise to deal with such a project since the sectoral impact was not presented to the EAC. However, the court held that the case on hand does not involve multi-sectoral components to it as it is a “simpliciter construction project.” It also said that the petitioners had failed to substantiate their apprehensions by placing material on record to the contrary.

What does the dissenting opinion say?

Justice Sanjeev Khanna, the third judge on the Bench, penned a note of dissent. His disagreement from the majority verdict primarily relates to the issue of change in land use in the Master Plan of Delhi. Justice Khanna was of the view that the change in land use must be struck down on both procedural and substantial grounds. On procedure, the judge noted that it was initiated without a consultation process. “Mere uploading of the gazette notification giving the present and the proposed land use with plot numbers was not sufficient compliance, but rather an exercise violating the express as well as implied stipulations, that is, necessity and requirement to make adequate and intelligible disclosure.” He held that the central government did not give adequate thought to the concerns of the public and not enough time for those who raised objections to make their case. He said that the permissions given by the CVC appear pre-determined. Justice Khanna also disagreed with the majority view that the modification was substantial and not a “minor change”.



SC TO HEAR PLEA AGAINST CONFESSION

The Supreme Court agreed to consider after three weeks a petition filed by a group of women against the compulsory nature of sacred confessions to priests in Christianity. Appearing before a Bench led by Chief Justice of India S.A. Bobde, senior advocate Mukul Rohatgi, for the petitioners, said “confessions are being abused”. But Chief Justice Bobde said the veracity of such allegations would depend on the individual facts in every case. “There cannot be a rule to impose confessions on a worshipper... Ladies are forced to confess before the priest... The court has to see whether confessions are an integral part of the religion,” Mr. Rohatgi went on to submit. He said forced confessions violated the right to privacy. When asked by the court why it should intervene in an obviously ecclesiastical issue like this, he reminded the court about its interventions in questions concerning the personal laws and customs of communities like the Bohra Muslims and Parsis.

Legal ambit

He said the court could examine the issues in the petition as they came within the ambit of the questions of faith, rights of women and equality referred to a nine-judge Constitution Bench in the Sabarimala case. Mr. Rohatgi then sought more time to amend the petition and add more facts. Attorney General K.K. Venugopal, when asked for an opinion by the court, said the whole issue stemmed from the Jacobite-Orthodox dispute. *The Supreme Court had upheld the validity of the 1934 Constitution of the Malankara Orthodox Syrian Church to govern the parishes under the church.* He suggested that the Kerala High Court should hear it. “The Kerala High Court knows the entire case history,” he said. *Earlier, the court had agreed to examine a separate but similar plea by members of the Malankara Syrian Church in Kerala seeking a declaration that forced confessions were unconstitutional by nature.* The petition had said these confessions may involve sexual exploitation of parishioners. “Church is forcing the members to mandatorily confess and mandatorily make payment of monies/dues and the said practises indulged in by the church are of public nature, affecting human dignity and liberty of thought and that the believers have been forced to remain meek and quiet out of fear of removal from parish membership, social ostracisation, etc,” it had stated.

Open to exploitation

“This pernicious practice of forced, compulsory and mandatory confession [not being voluntary] from every member, both men and women, is causing several other problems, including sexual exploitation of women and blackmailing,” the petition, filed by Mathew T. Mathachan and two others, had said. It had sought a judicial declaration that mandatory confession is a violation of the right to privacy, liberty and dignity of the parishioners.

WHY SUPREME COURT’S RULING ON FARM LAWS SETS A TERRIBLE CONSTITUTIONAL PRECEDENT

The issues in the farm bills are complex. But no matter which side you are on, you should now worry about how the Supreme Court is interpreting its function, states Pratap Bhanu Mehta, contributing editor, The Indian Express. *The apex court has suspended the implementation of the farm laws, and created a committee to ascertain the various grievances. But it is not clear what the legal basis of this suspension is.* The court’s action, at first sight, is *a violation of separation of powers.* It *also gives the misleading impression that a distributive conflict can be resolved by*



technical or judicial means. It is *also not a court's job to mediate a political dispute. Its job is to determine unconstitutionality or illegality.* Even in suspending laws there needs to be some prima facie case that these lapses might have taken place. But instead of doing a hearing on the substance — the possible federalism challenge, the possible challenge based on the ouster of grievance redressal — and then pronouncing a stay, it has simply decided to create a committee to hear farmers' grievances and wade into political territory. Here is why Mehta believes what the Supreme Court has done is dangerous. It has muddied all the possible lines of judicial procedure, where it is not clear what the locus standi of different counsel are, what are the specific prayers that need to be addressed and how the court's remedies address them. It has not really heard the farmers, whose counsel were not fully heard before the passing of orders. "You can have a view on whether the government is right or the farmers. But it will be up to the people and the political process to decide who is correct, as long as there is no unconstitutionality involved...By appointing a committee, the court has shifted the onus on the farmers to stop their protests, or else appear unreasonable," writes Mehta.

REPEAL LAW PERMITTING SEIZURE OF LIVESTOCK: SC

The Supreme Court asked the Centre to "delete" its three-year-old law which allowed seizure and subsequent confiscation of livestock from people who depended on these animals for a livelihood, even before they were found guilty of cruelty towards them. A Bench led by Chief Justice of India Sharad A. Bobde warned the government that it would "stay" the implementation of a 2017 law, which allowed authorities to seize cattle on a mere suspicion that they suffered cruel treatment at the hands of their owners or were being primed for slaughter. These animals, the law prescribes, would then be lodged in gaushalas as "case property" to await the court's verdict. In short, a farmer, a livestock owner or a cattle trader loses his animals before being found guilty of the charge of cruelty. "Understand one thing here... These animals, and I am not talking about pet dogs and cats, are a source of livelihood. You cannot just seize and keep them confiscated like that... Your rules are plainly contrary to Section 29 of Prevention of Cruelty to Animals Act, under which only a person convicted of cruelty can lose his animal. *You either delete this (rule) or we will stay it,*" Chief Justice Bobde told Additional Solicitor General Jayant K. Sud, appearing for the Centre. Mr. Sud submitted that the Rules had already been notified. "There is evidence on record to show that actual cruelty is being done against animals," the law officer said. He then sought time to file a response. The court scheduled the next hearing for Monday. The law under question is the Prevention of Cruelty to Animals (Care and Maintenance of Case Property Animals) Rules, 2017 notified on May 23, 2017. The rules were framed under the Prevention of Cruelty to Animals Act, 1960. The 2017 Rules allow a Magistrate to forfeit the cattle of an owner facing trial under the Prevention of Cruelty to Animals Act. The animals are then sent to infirmaries, gaushalas, pinjarapole, etc. These authorities can further give such animals for "adoption". The Buffalo Traders Welfare Association, represented by advocate Sanobar Ali Qureshi, said the Rules were being used as a tool to seize and forfeit their cattle. The association said *the law's existence had become a cause for polarisation in society.*

SKEWED SOCIETAL GENDER CONDITIONING

Unnao. Hathras. And now Badaun. The dirge continues as news of another horrific alleged rape and murder emerged from Uttar Pradesh on Sunday. *A 50-year-old anganwadi worker, who visited a temple, was found brutally battered outside her home at a village in Badaun district. After she*



succumbed to the injuries, a depressingly similar pattern came to light: the police had dithered with both the post mortem and in registering an FIR. The culprits, a priest and his two associates, were arrested by Thursday night, with the State government saying that stern action would be taken. What came as a shocker, however, was the reaction of a senior member of the National Commission for Women who visited the family. Chandramukhi Devi was quoted as saying, "I tell women again and again that they should never go out at odd hours under anyone's influence... I think if she had not gone out in the evening or was accompanied by any child of the family perhaps this incident could have been avoided." Such remarks worsen the situation for women who have to battle against skewed societal gender conditioning. When insensitive utterances emanate from a national commission actually meant to uphold women's rights, it reeks of a primitive mindset wherein lawlessness is overlooked and responsibility pinned, perversely, on the woman for ensuring her own well-being. All the hard work put in by women in all spheres including science and technology comes undone by such crude statements. The equal rights movement means nothing if women are stopped from going out whenever they want to or need to, day or night. But it is also imperative that with society steeped in gender prejudices, the government, police and family must step up to provide a safe environment. In 2019, the NCRB data show 88 rape cases were recorded every day in India with U.P. reporting the second-highest number at 3,065 cases. But records never tell the whole story for many rapes are not reported due to social stigma. Although after the Nirbhaya incident in 2012, the Criminal Law (Amendment) Act laid down the rules for stringent punishment, crimes against women continue, pointing at other issues that should be addressed from patriarchal mindsets to poor policing. For gender parity, more women must join the workforce, but thereby hangs another sorry tale. According to Centre for Monitoring Indian Economy data, women accounted for 10.7% of the workforce in 2019-20 and many lost jobs due to the pandemic. By November 2020, the CMIE reported that men recovered most of their lost jobs but not women. It is a matter of shame that even in 2021, women are asked to stay indoors at night instead of reaching for the moon.

SC TELLS GOVT. TO ARM FOREST OFFICERS TO FIGHT POACHERS

The Supreme Court on Friday urged the government to arm forest officers and provide them with bullet-proof vests and vehicles when told that India recorded the "greatest number of mortal fatalities" among forest officials in the world. Appearing before a Bench led by Chief Justice of India Sharad A. Bobde, senior advocate Shyam Divan said India accounted for 30% of fatalities among forest rangers in the world. Chief Justice Bobde said forest officials were up against a very powerful force. "Proceeds of crime are in millions of dollars. This is an international crime. Recently, I was told that the pangolin skin trade extended to China," he noted. The court said the Centre should consider involving premier organisations such as the CBI to help the forest staff. "There should even be a separate wing or wildlife division in the Enforcement Directorate with clean officials to track and investigate crimes of the poachers and the proceeds of their crime... The amounts involved are huge and justify the formation of a separate wing by the ED," Chief Justice Bobde addressed Solicitor General Tushar Mehta, for the Centre. CJI Bobde pointed out how forest rangers in Assam were armed and "no one dares come near them". "But in States like Madhya Pradesh, they roam around with lathis. In Karnataka, forest guards are in chappals and [carry] just lathis... In these States, forest guards are slapped around by poachers," the CJI said. He asked Maharashtra counsel Rahul Chitnis why forest officers in the State were not armed. Mr. Chitnis, however, insisted that they were. "But why this unequal situation among forest officials from State to State? Forest officers have larger responsibilities than police officers in cities. They



patrol large tracts of uninhabited forests. A forest guard is alone in his duty, unlike a police officer in a city who can call for back-up," CJI Bobde said. Amicus curiae A.D.N. Rao said States did not utilise funds meant for arming the forest force. The court asked the Solicitor General, Mr. Rao and Mr. Shyam Divan to make a joint submission on the measures that could be adopted to protect the forest staff. The court posted the case after four weeks.

OVER HALF OF ARMY PERSONNEL UNDER SEVERE STRESS

More than half of Indian Army personnel seem to be under severe stress and the Army has been losing more personnel every year due to suicides, fratricides and untoward incidents than in response to any enemy or terrorist activities, according to the findings of a study by United Service Institution of India (USI), a Service think tank. "There has been a significant increase in stress levels amongst Indian Army personnel during approximately last two decades due to operational and non-operational stressors," one of the findings says. "Prolonged exposure of Indian Army personnel to Counter Insurgency and Counter Terrorism (CI/CT) environment has been one of the contributory factors for increased stress levels," the study notes. The research was undertaken during 2019-20 by Col. AK Mor, Senior Research Fellow at the USI, and presented at a webinar titled "Prevailing Stress Levels in Indian Army due to Prolonged Exposure to Counter Insurgency/Counter Terrorism environment", organised in October 2020 and uploaded on the website on December 07 last. While operational stressors are well understood and accepted by Army personnel, the study says that non-operational stressors that add on "have compounding adverse effects on health and combat efficiency of soldiers and thus affecting their respective units too." In this regard, officers experience comparatively much higher cumulative stress levels, compared to the Junior Commissioned Officers (JCO) and Other Ranks (OR) and the stress causative factors are also different. The study observes that the overall job satisfaction and pride in uniform remains high amongst JCOs and ORs. "It seems to be a growing matter of concern amongst Officers, requiring urgent interventions from the highest levels of government," it says. "Despite harsh and challenging service conditions, Indian Army personnel remain highly motivated to serve in CI/ CT areas voluntarily... However, the Officers lack a similar level of trust, faith and confidence in their leadership that JCOs and ORs demonstrate," it states.

Management measures

The study highlights that various management measures implemented by the Army and Defence Ministry in the last 15 years have not been able to achieve the desired results. "Units and sub-units under stress are likely to witness an increased number of incidents of indiscipline, unsatisfactory state of training, inadequate maintenance of equipment and low morale, motivation and esprit-de-corps, thereby, adversely affecting their combat preparedness and operational performance," it says.

FOUNDATION STONE LAID FOR 'NEW ANUBHAVA MANTAPA'

Karnataka Chief Minister B.S. Yediyurappa laid the foundation stone for the 'New Anubhava Mantapa' in Basavakalyan, the place where 12th century poet-philosopher Basaveshwara lived for most of his life. He promised the completion of the ₹500 crore project within two years on a 7.5 acre area and said it would be inaugurated by Prime Minister Narendra Modi. While a project to highlight the teachings of Basaveshwara (an icon of the Veerashaiva-Lingayat community) was first proposed back in 2016 when Siddaramaiah was the Chief Minister and a committee led by



Go. Ru. Channabasappa was set up to draw a plan, the project getting a push now is politically loaded. Basavakalyan, an important pilgrim centre for Lingayats, is headed for a bypoll soon following the death of its MLA B. Narayan Rao from the Congress. In fact, *the government's controversial decision to set up the Maratha Development Corporation was also in the backdrop of the bypoll, given the strong presence of the Maratha community here.* The New Anubhava Mantapa project is expected to bolster Mr. Yediyurappa's image as an undisputed Lingayat strongman, especially when a leadership issue has emerged prominently within the BJP and there is one-upmanship to claim the community's support. Interestingly, while the government has not released the approved funds of close to ₹2,000 crore for the Kalyana Karnataka Region Development Board (KKRDB), the Chief Minister said there would be no dearth of funds for the ₹500 crore New Anubhava Mantapa project. He also announced ₹50 crore for the Maratha Development Corporation with alacrity.

Grand structure

The New Anubhava Mantapa, as envisaged now, will be a six-floor structure in the midst of the 7.5 acre plot and represent various principles of Basaveshwara's philosophy. *It will showcase the 12th Century Anubhava Mantapa (often referred to as the "first Parliament of the world") established by him in Basavakalyan, where philosophers and social reformers held debates.* The building will adopt the Kalyana Chalukya style of architecture.

THE IMPORTANCE OF SOCIAL INTERACTIONS (ASHA VENUGOPALAN - A PHD STUDENT, DEPARTMENT OF POLITICAL SCIENCE, STONY BROOK UNIVERSITY) (FOR PSYCHOLOGY OPTIONAL)

A year of restricting ourselves to the confines of four walls has made us keenly aware of our past exchanges, not only with our families, but also with the larger society. Of the many victims of the COVID-19 pandemic are social interactions and the millions of friendships that should have formed at schools and workplaces. In a country riven with oppressive prejudices, the past year may have widened the greatest fault line in the Indian society — religion. Hindus and Muslims constitute not only the largest religious communities in India, but they perhaps also form the pair with the most fraught relations in the recent decade. Still, over the years, children and adults have mitigated the barriers created by socialisation through everyday interactions across religious groups. But what happens when everyone spends a year without forming new friendships or circumscribing their interactions to limited online (or offline) meetings? The pandemic's collateral damage may include tolerance and understanding between the majority and the minority.

Many inequities

The religious identities of Hindus and Muslims have shaped their social ties, their political loyalties and their interaction with the Indian state. The long history of Hindu-Muslim ties in the subcontinent is marred by grotesque violence fuelled by myths, rumours and prejudice. The prevalence of cow-vigilante violence and 'anti-conversion' laws in recent years stands testimony to the worsening of inter-religious ties and deepening of prejudice by the majority community. In fact, tropes used to concoct fear about the Muslim community in the 1920s, such as 'cow-killers' and 'abductors of Hindu women', have found appeal even in the 21st century. The propagation of such stereotypes and the resulting prejudices allow for, and even normalise, violence against the



minority to 'protect the self'. While it would be an exaggeration to claim that every social encounter between members of the two groups is troubled, all is certainly not well in India. The display of prejudice need not take a violent form at all. The refusal to grant tenancy to members of the Muslim community pushes them to seek houses in a more homogenised area, progressively creating ghettos and further fuelling stereotypes. How do you mitigate a prejudice that is so pervasive and intense?

'Contact Hypothesis'

In 1954, Gordon Allport published *The Nature of Prejudice*, which contained, among other analyses of inter-group behaviour, a theory on prejudice. Specifically, it contained a hypothesis on how to reduce prejudice among majority and minority groups, popularly called the 'Contact Hypothesis'. The idea was simple: contact (with some caveats) reduces prejudice. Subsequently, decades of social psychology research arrived at a far simpler idea: friendship reduces prejudice. Could it really be that simple? Could that work in India? The answer to both questions is the same: yes, to some extent. The empirical evidence largely supports the proposition. Multiple studies have noted that frequent interactions between members of different religious groups vastly reduce negative perceptions and anxiety towards 'the other'. For instance, a youth study in 2017, conducted by Lokniti-CSDS and Konrad Adenauer Stiftung, found that 83% of Hindus who had a non-Hindu friend were comfortable having a non-Hindu neighbour, compared to 70% of Hindus who did not have a non-Hindu friend. Another paper discovered that even among people who consume media plentifully, interactions with people outside their community weakens prejudice. Education, however, presents an interesting puzzle. A recent study finds that college-educated Hindus are more likely than non-literate Hindus to perceive the Muslim community negatively, irrespective of whether they had a friend from the community or not. Although close interaction may 'significantly' reduce prejudices, this reduction is minimal at best. Firstly, the attitudes of suspicion and negativity towards the Muslim minority are deeply entrenched in the Indian society. Secondly, as this newspaper has reported over the last few years, the ghettoisation of Muslims continues to define both urban and rural landscapes. This ensures that most instances of quotidian social interactions — be it an evening tea or meeting at markets — are effectively denied, thereby limiting the building of lasting friendships at workplaces and schools. Thirdly, while Hindu individuals might hold great respect and affection for Muslim friends, they might not hold the same view about the community as a whole since they would consider a Muslim friend to be an 'exception to the rule'. As a result, whilst interactions do take place and reduce prejudice, they do not cross a threshold already laid down by generations of socialisation and stereotypes.

Redefining the 'us'

Prejudice is a peculiar phenomenon. It is sustained through time, remains unaffected by even positive interpersonal relations, and provides the ammunition for communalism. Ashutosh Varshney asks in his book *Ethnic Conflict and Civic Life*, "Why do Hindus and Muslims live peacefully in Calicut but not in Aligarh?". The answer, as he notes, lies in civic engagement and redefining the 'us'. Ties need to be forged not just between individuals, but also across larger communities such that the relationships breach the confines of religious identities and encompass a multitude of identities. Be it local neighbourhood associations, professional unions or linguistic associations, membership of this civil society creates a new 'us'. It allows society to maintain open lines of communication, even during a pandemic. During a year in which students and professionals have remained within the confines of their houses, what they have missed out on



are unencumbered everyday interactions with their peers. Bonds of camaraderie are built over watercooler chats and rants about bus mates. In the absence of such avenues, it behoves parents, teachers and employers to encourage engagement through social organisations or other forms of safe civic engagement.

FLU IN FULL FLIGHT

Just three months after India declared itself to be free of the avian influenza outbreak, the highly pathogenic avian influenza subtypes, H5N1 and H5N8, have been reported from a dozen epicentres in four States — Rajasthan, Madhya Pradesh, Himachal Pradesh and Kerala. In addition, thousands of poultry birds have died in Haryana, while Jharkhand and Gujarat, too, have sounded an alarm; the cause in these three States is still unknown. The two subtypes have targeted different birds — *crows in Rajasthan and Madhya Pradesh, migratory birds in Himachal Pradesh, and poultry in Kerala. While tests have confirmed H5N1 for causing the deaths of over 2,000 migratory birds in Himachal Pradesh, H5N8 has been identified for killing thousands of poultry in Kerala, and hundreds of crows in Rajasthan and Madhya Pradesh. In a bid to stop the spread, as on Wednesday over 69,000 birds, including ducks and chickens, were culled in Alappuzha and Kottayam as per India's 2015 National Avian Influenza Plan. Other States have been asked to be vigilant of any unusual deaths or disease outbreak signs amongst birds, particularly migratory ones. Migratory birds have been largely responsible for long-distance transmission of the virus into India during winter.* It then spreads through local movement of residential birds and poultry. Movement of men and material from poultry farms too has been a cause for further spread. This is why *States have been asked to strengthen biosecurity of poultry farms, disinfection and proper disposal of dead birds.* With backyard rearing of poultry birds common, the task of elimination will be particularly difficult. A recent European Food Safety Authority report says 561 avian influenza detections were made between August-December in 15 European countries and the U.K. *The virus was predominantly found in wild birds, and a few in poultry and captive birds. H5N1 and H5N8 were two of three subtypes found in Europe.* Genetic analysis helped confirm the spread from Asia to west-central Europe, suggesting a “persistent circulation of this virus strain, likely in wild birds in Asia”. *While avian influenza virus crossing the species barrier and directly infecting humans happens occasionally, human-to-human spread has been rare.* But mutations or genetic reassortment of an avian influenza A virus and a human influenza A virus in a person can create a new influenza A virus that could likely result in sustained transmission between humans, thus increasing the risk of a pandemic influenza. Hence, all efforts should be directed at stamping out the outbreaks in the affected States. It is also important to undertake genome sequencing of virus samples to track the evolution of the virus.

HOW ARE CANDIDATES SELECTED FOR UPSC MAINS, INTERVIEW?

The Delhi High Court on Wednesday asked the Centre and the Union Public Service Commission (UPSC) to explain how they were selecting candidates for the Civil Services mains exam and subsequent interview without declaring the actual number of vacancies, particularly for the disabled category. A Bench of Chief Justice D.N. Patel and Justice Jyoti Singh remarked, “*When your vacancies are fluctuating, how many people will you call for the mains and interview? If you have power to call any number of candidates for mains and interviews without declaring the actual vacancies, it is known as arbitrariness.*” The court also directed the Centre and the UPSC to explain why there was a difference of eight vacancies for disabled in the notification advertised by it



against what is calculated by NGO, Sambhavana, a registered society of the disabled for the disabled. It, however, declined the plea to stay the mains exam, which is scheduled between January 8 and 17.

Vacancies for disabled

Sambhavana, in its plea, has claimed that the UPSC reserved only 24 vacancies for persons with disabilities out of a total 796 'expected approximate vacancies'. The NGO said this was below the 4% mandatory reservation under Section 34 of the Rights of Persons with Disabilities (RPwD) Act, 2016. The plea added that 4% of 796 vacancies works out to 32. The petition further said that the UPSC's notice was "illegal as what is certain and clear for the disabled under the RPwD Act, 2016, is made vague, ambiguous and uncertain by the device of expected approximate vacancies". "The notice becomes a fraud on the RPwD Act since it gives 4% reservation of 796 expected approximate vacancies. To reserve something of that which does not legally exist is to legally give nothing," Sambhavana said. Another petitioner in the case, Evara Foundation, in its plea, has contended that the number of seats reserved for visually impaired, deaf and hard of hearing and locomotor disabilities was not in accordance with the RPwD Act. The court will hear the case again on January 29.

USING GOD'S NAME TO SELL ARTICLES ILLEGAL

The Aurangabad bench of the Bombay High Court has declared that advertisement of any article using the name of any God and claiming that it has supernatural qualities, is "illegal" and falls under the Maharashtra Prevention and Eradication of Human Sacrifice and other Inhuman, Evil and Aghori Practices and Black Magic Act. A division bench of justices T.V. Nalawade and M.G. Sewlikar was hearing a petition filed by Rajendra Ambhore, a teacher, seeking a direction and injunction to prevent advertisements on television channels that promote the sale of articles like Hanuman Chalisa Yantra. Mr. Ambhore said that in March 2015, he came across advertisements on TV claiming special, miraculous and supernatural properties/qualities in Hanuman Chalisa Yantra prepared by one Baba Mangalnath, who had achieved 'siddhi' (supernatural powers) and was blessed by Lord Hanuman. The Yantra costs ₹4,900 and was said to be made of 24-carat gold. Singers and such other celebrities were shown in the ads talking about their experience, the plea said. The court said telemarketers change the names of companies, Gods and Babas to show that each was a different Yantra. The court went on to say, "The objectives quoted in the Black Magic Act can be achieved mainly through education. Reformists like Mahatma Phule and Babasaheb Ambedkar, who worked to remove evil practices and spread awareness against superstition, were born on this soil." It could safely be said that at least basic education was available to everybody in the State. But even highly educated people were attracted to mantra-tantra and black magic. In such a situation, the Black Magic Act was required to be enacted even in a progressive State like Maharashtra. "The propagation for sale by advertisement of any article, naming it Yantra or otherwise, by attaching the name of any God to such an article, including Lord Hanuman or any Baba, with the representation that these articles have special, miraculous and supernatural properties and that they will help people to become happy, make progress in business, see advancement in career, show improved performance in education, recover from disease etc., is illegal," it held. Such propagation and advertisement, fall under the Maharashtra Prevention and Eradication of Human Sacrifice and other Inhuman, Evil and Aghori Practices and Black Magic Act, the court held. *The court directed the State and Vigilance Officers to register such crimes, giving reports against persons who make such advertisements and sell such articles. The court also directed*



the State and Central governments to create separate cells in Mumbai to ensure that no such features were telecast, either as advertisement or in the name of programmes, in Maharashtra.

TWO-DAY ASIAN WATERBIRD CENSUS OFF TO A FLYING START

The two-day Asian Waterbird Census-2020 commenced in Andhra Pradesh on Tuesday under the aegis of experts from the Bombay Natural History Society (BNHS), covering at least two dozen sites, including Coringa Wildlife Sanctuary, Kolleru Lake and Krishna Sanctuary. In Godavari estuary, the Kumbabhisekham mudflat, the wetland opposite the Coromandel industrial area and other Important Bird Areas (IBAs) are being covered.

AN ARBITRARY DIRECTIVE (M.P. NATHANAEL - INSPECTOR GENERAL OF POLICE (RETD), CRPF)

Recently, the Centre and the West Bengal government were engaged in a tussle. The Centre directed the State government to relieve three IPS officers on Central deputation; the State government refused. The Centre's move followed the incident that took place in early December when BJP president J.P. Nadda's convoy travelling from Sirakol to Diamond Harbour in West Bengal was attacked by stone-throwing protesters carrying Trinamool Congress flags. The three IPS officers in question had been posted as in-charges of the police district, range, and zone where the incident took place. The Centre's directive not only reeks of vengeance but goes against the norms governing deputation of officers to the Centre. To apportion blame on the three IPS officers for the attack without even a perfunctory inquiry goes against the norms of justice. It is impossible to identify a potential miscreant in a crowd that gathers on the road when a leader passes by. *In case the powers that be felt that the three officers should be penalised for dereliction of duty, a formal inquiry followed by penal action, if necessary, would have met the ends of justice. Ostensibly, the Centre's decision was taken to teach the officers a lesson that they were at its mercy, as the Ministry of Home Affairs (MHA) is the controlling authority for all IPS officers. The three officers have been posted to the Indo Tibetan Border Police (ITBP), the Sashastra Seema Bal (SSB) and the Bureau of Police Research and Development (BPRD).*

The process for deputation

In normal course, *officers willing to be deputed to the Centre are asked to apply through the States. A panel of selected officers is prepared after which they are deputed to various Central Armed Police Forces (the Central Reserve Police Force, the Border Security Force, the Central Industrial Security Force, ITBP and SSB) and even to Central Police Organisations like the Intelligence Bureau, the Central Bureau of Investigation, the Research and Analysis Wing, the National Investigation Agency, and BPRD. It is important to note that the officers are selected after their dossiers are scrutinised and not nominated as the MHA has done with respect to the three officers. Even when the officers opt for Central deputation, they give their choice of the organisation where they would like to serve. Selection is done strictly on merit, based on their annual performance reports. When officers are forcibly deputed to Central organisations, they go with the perception that they have been deputed on grounds of inefficiency or as a punishment. Demoralised officers who become victims of political manipulations cannot be expected to give their best.* According to a MHA memorandum of April 2000, "the two-way movement of officers from State to Centre and back is of mutual benefit to the States and Government of India on the one hand and to the officers concerned on the other." How far it would benefit demoralised officers who are forced to join Central organisations is anybody's



guess. *The message that goes out to personnel of Central organisations is that these organisations are dumping grounds for those unwanted in the States or those whom the Centre wants to penalise for any transgression.*

A proposal to reduce CDR

The Central government is already working on a proposal to reduce the Central Deputation Reserve (CDR) of IPS officers from 1,075 to about 500. This is being done as most States are not willing to spare officers to serve on Central deputation. In 2019, only 428 officers were working on Central deputation against the strength of 1,075. Most officers avoid Central deputation as they enjoy better perks and powers in the States. On the other hand, Central deputation could mean a posting in the Northeast or in a Left Wing Extremism-affected State. Hence, when there is already a proposal to slash the strength of the CDR, the Centre's insistence that the three officers should be relieved appears farcical. Since the States are bound to oppose tooth and nail such arbitrary directives by the Centre, such orders are best avoided.

SHOCK TREATMENT WILL NOT WORK IN AGRICULTURE (SARTHI ACHARYA - DELHI CHAIR PROFESSOR, INSTITUTE FOR HUMAN DEVELOPMENT. SANTOSH MEHROTRA IS THE EDITOR OF 'REVIVING JOBS. AN AGENDA FOR GROWTH')

Almost all sections of people including farmers agree that the Agricultural Produce Market Committee (APMC)-mandi policies for agricultural marketing, initiated in the 1960s for a few crops, have outlived their utility and the system needs a new policy in the face of the agricultural sector's growth slowdown, the crop-composition not widening, and investments in land not happening. Recently, the government of the day has opened up the output market with the aim to let market forces improve efficiency and create more value for farmers and the economy. These laws state that farmers are now free to sell all their products anywhere and to anyone beyond the physical premises of APMC markets. Additionally, the laws promote contract farming through establishing partnerships between farmers and food-processing companies, and also permit unlimited hoarding of food except in special circumstances.

What farmers want

Three main suggestions were put forth by farmers when we recently made enquiries with them: one, their produce prices should be the cost of production plus a reasonable mark-up; two, fluctuations in prices should be minimal; and three, there should be little or no interface with legal or administrative officials — they are not comfortable dealing with the “sahibs and the police”. All these farmer concerns have been ignored in the way the current laws are drafted. Additionally, as the old laws are being repealed, they said that there is a need for a wider view of the sector to include more crops. Thus, if the government encourages farmers to move from wheat to vegetables, markets for the latter should address all the above three aspects.

New markets are an unknown

The first law of the Minimum Support Price-mandi is a known devil, but the new markets will be an unknown ghost with no control over them by anyone. Thus, while “malpractices” in mandis are known and local leaders (Members of Parliament, Members of the Legislative Assembly, panchayats) are often brought in to vent farmers' anger or arbitrate in difficult situations, malpractices in the new systems are neither forecast-able nor is there any authority to report to.



Next, while the government says that the mandi-MSP system will continue, the question is, for how long? If the alternative traders offer better prices, farmers will go there and not to the mandis (as is already the case, highlighted in the recent media article by Gurcharan Das; <https://bit.ly/3928m3R>). *What happens after two to three years when the regulated mandis become weaker or begin to shut down due to lack of business? There are many issues here. Traders could reduce the prices on more than one pretext, such as finding faults with the product; declining to buy on the pretext of glut (a wait and watch strategy); defaulting on payments, and so on. Since traders are few (at least locally) they can form cartels, while farmers many: this is imminently possible. The farmers are further handicapped by the fact that they come from long distances with loads of several quintals/tonnes of produce on hired tractors; going back owing to the transport cost incurred is not an option for them.* Their situation worsens when their cash needs are immediate, which is the case for the small farmers who constitute 90-plus% of those who sell at the mandis at MSP.

Advantage corporate buyers

The second law has somewhat similar issues. The corporate-buyers might just not buy the full quantity of the product on one or another pretext or delay payments; and if farmers complain, the corporates have access to a battery of lawyers, the fine print in contracts, the advantage of language, and, above all, the capacity to wait it out. In both the above cases, the problem is of contracts between unequals: whether it is traders or corporates, they are far fewer and with deeper pockets, and they will deal with (poor/little-educated) small farmers (about 85% have two or less hectares of land), resulting in unequal outcomes. The other issue is in regard to different regions and crops. Many proponents of the agri-marketing laws maintain that farmers from outside the wheat-rice belts in northern India are not protesting. Evidently so, since the country is diverse with some 15 agroclimatic zones and has over 50 crops grown.

Issues and farmers' reactions

We also forget that farmers protest against policies in areas where they hail from: like in eastern India, farmers revolted in 1860 against indigo-farming, Mappilas revolted in 1921, or even the Warli Adivasi Revolt of 1945. More recently, in the 1970s to 2010s, Sharad Joshi led agitations for the farming sector mainly in Maharashtra, or farmers in Tamil Nadu had protested demanding Cauvery water. There are many more examples. *Farmers protest against problems that affect them: they are not a homogeneous lot.* If in 2020 a new policy is being formulated, why is it (ironically) uniform for all farmers, all land and all crops, of opening up the markets; markets which are almost fully opaque, unequal and having imperfect information? What happens to the semi-arid areas and the farmers therein, where crop outcomes are uncertain? What happens to small and marginal farmers who have little to market and are largely inarticulate? How will risk be mitigated if farmers move from wheat-rice cultivation to more volatile crops such as vegetables and fruits, or pest-prone crops such as cotton? Or what happens to landless labourers who have migrated from far away to work in fields (such as from Bihar to Punjab)? Should there not be a comprehensive policy in regard to the agricultural sector rather than a "shock treatment" for agri-markets alone?

Expert recommendations

The so-far neglected problem of stagnation and high input prices in agriculture can be addressed through a systematic approach proposed in the M.S. Swaminathan Commission and/or the Ashok Dalwai Committee. Typical examples are transitions being worked out for farmers to move out of



water-soaking paddy crop in Punjab-Haryana to other crops; say, in five years, they would reduce the area under paddy by 25-30%, and the loss they incur in the short run, will be compensated for by the government. This could, for example, also be done for sugarcane in western Maharashtra. *Shock treatments do not work anywhere, be it agriculture, industry or the economy. Many an industry, post-1991, shut down due to "shock treatment" then, resulting in a second de-industrialisation and the loss of hundreds of thousands of industrial jobs. The results in agriculture are likely to be no different in the face of shocks.*

DON'T IGNORE THE WOMEN FARMERS (T. SUMATHY AKA THAMIZHACHI THANGAPANDIAN - AN ACADEMIC, TAMIL POET, AN MP (SOUTH CHENNAI CONSTITUENCY), AND MEMBER OF THE STANDING COMMITTEE (INFORMATION AND TECHNOLOGY))

Eminent agriculture scientist M.S. Swaminathan once said, "Some historians believe that it was women who first domesticated crop plants and thereby initiated the art and science of farming. While men went out hunting in search of food, women started gathering seeds from the native flora and began cultivating those of interest from the point of view of food, feed, fodder, fibre and fuel."

A common misconception

In India, whenever we talk about agriculture, we think of men as farmers. However, this is far from the truth. According to the agricultural census, 73.2% of rural women are engaged in farming activities but only 12.8% own landholdings. Due to cultural, social and religious forces, women have been denied ownership of land. This stems from the perception that farming is a man's profession. The India Human Development Survey reports that 83% of agricultural land in the country is inherited by male members of the family and less than 2% by their female counterparts. Thus, women are mostly left without any title of land in their names and are excluded from the definition of farmers. Besides, 81% of women agricultural labourers belong to Scheduled Castes, Scheduled Tribes, and Other Backward Classes, so they also contribute to the largest share of casual and landless labourers. The government too turns a blind eye to their problem of non-recognition and conveniently labels them as 'cultivators' or 'agricultural labourers' but not 'farmers'. Without any recognition, women are systematically excluded from all the benefits of government schemes. Moreover, they are not guaranteed the rights which they would otherwise be given if they were recognised as farmers, such as loans for cultivation, loan waivers, crop insurance, subsidies or even compensation to their families in cases where they commit suicide. Non-recognition as farmers is only one of their problems. As the Mahila Kisan Adhikaar Manch (MAKAAM) notes, they have unequal access to rights over land, water and forests. There is gendered access to support systems such as storage facilities, transportation costs, and cash for new investments or for paying off old dues or for other services related to agricultural credit. There is also gendered access to inputs and markets. Thus, despite their large contribution to the sector, women farmers have been reduced to a marginal section, vulnerable to exploitation. Perhaps that is why they are at the front line of this protest — to remind us that they are too are farmers and have an equal stake in this fight.

RIL TO HC: NO PLANS TO ENTER 'CORPORATE' FARMING

Amid the ongoing farmers' agitation surrounding the farm laws passed last September, Reliance Industries Limited (RIL) said it had not done any "corporate" or "contract" farming in the past, and had absolutely no plans to enter this business. The firm also said neither Reliance nor any of its



subsidiaries had purchased any agricultural land, directly or indirectly, in Punjab, Haryana or anywhere else in India, for the purpose of “corporate” or “contract” farming and had absolutely no plans to do so. The submissions were made *in a petition filed by RIL in the Punjab and Haryana High Court, which had sought the intervention of government authorities to put a stop to the vandalization of mobile towers.* The matter will come up for hearing on January 5, advocate Aashish Chopra, counsel for the petitioner told, The Hindu. In the backdrop of several cases of vandalism of its mobile towers and disruption of telecom services in Punjab during the ongoing farmers’ agitation against farm laws, RIL has approached the courts. In an official statement, RIL said it had moved the High Court through its subsidiary Reliance Jio Infocomm Limited (RJIL). The statement said the facts establish that Reliance had nothing to do with the three farm laws currently debated, and in no way benefited from them. “Reliance Retail Limited (RRL), Reliance Jio Infocomm Limited (RJIL), or any other affiliate of our parent company, that is, Reliance Industries Limited, had not done any “corporate” or “contract” farming in the past, and had absolutely no plans to enter this business,” it said. The statement said Reliance Retail sold products of all categories. “It does not purchase any food grains directly from farmers. It has never entered into long-term procurement contracts to gain unfair advantage over farmers,” it added.

WHY MORE THAN HALF OF INDIA’S KIDS, WOMEN ARE ANAEMIC

Indian women and children are overwhelmingly anaemic, according to the National Family Health Survey 2019-20 released earlier this month, and the condition is the most prevalent in the Himalayan cold desert. The Indian Express takes a look at the findings of the survey

What is anaemia?

The condition of having a lower-than-normal number of red blood cells or quantity of hemoglobin. It can make one feel tired, cold, dizzy, irritable and short of breath, among other symptoms. *A diet which does not contain enough iron, folic acid or vitamin B12 is a common cause of anaemia. Some other conditions that may lead to anaemia include pregnancy, heavy periods, blood disorders or cancer, inherited disorders and infectious diseases.*

How widespread is anaemia in our country?

In Phase I of the National Family Health Survey (NFHS), result factsheets have been released for 22 states and UTs. Anaemia testing during the survey was done among children aged 6 to 59 months and among women and men aged 15 to 49 years of age. In a majority of these states and UTs, more than half the children and women were found to be anaemic. In 15 of these 22 states and UTs, *more than half the children are anaemic.* Similarly, more than 50 per cent women are anaemic in 14 of these states and UTs. The proportion of anaemic children and women is comparatively lower in Lakshadweep, Kerala, Meghalaya, Manipur, Mizoram and Nagaland, and higher in Ladakh, Gujarat, J&K, and West Bengal, among others. Anaemia among men was less than 30 per cent in a majority of these states and UTs.

What was the methodology used?

NFHS used the capillary blood of the respondents for estimation of anaemia. For children, a haemoglobin of less than 11 grams per decilitre (g/dl) indicated anaemia. For non-pregnant and pregnant women, it was less than 12 g/dl and 11g/dl respectively, and for men, it was less than



13 g/dl. Among children, prevalence was adjusted for altitude and among adults, it was adjusted for altitude and smoking status.

Why is anaemia so high in the country?

According to Dr Sunil Raina, head of community medicine at Dr Rajendra Prasad Government Medical College in Himachal Pradesh, *iron-deficiency and vitamin B12-deficiency anaemia are the two common types of anaemia in India. Among women, iron deficiency prevalence is higher than men due to menstrual iron losses and the high iron demands of a growing foetus during pregnancies.* Raina said that *lack of millets in the diet due to overdependence on rice and wheat, insufficient consumption of green and leafy vegetables, and dominance of packaged and processed foods which are low in nutrition could be the reasons behind the high prevalence of anaemia in India.* However, he added, *anaemia levels in India have consistently remained high in the post-independence period and not dropped significantly during this period, even following the green revolution when diet patterns changed. "Therefore, a deeper research is needed. There could be genetic or environmental factors, but such a study has never been conducted. Also, the current haemoglobin norms are based on western populations. In India, the normal standards could be different. There are women whose haemoglobin drops to six or eight sometimes but they remain healthy and well,"* he said.

What about the cold desert region of the western Himalaya?

In the union territory of Ladakh, a whopping 92.5 per cent children, 92.8 per cent women and around 76 per cent men are anaemic in the given age groups, as per the survey. In the adjoining Lahaul and Spiti district which lies in Himachal Pradesh, 91 per cent children and 82 per cent women are anaemic, the survey said. Both these areas are part of the Himalayan cold desert. In J&K and in rest of Himachal, the prevalence of anaemia is comparatively lower. Health officials theorise that the high prevalence of anaemia in the cold desert region *could be due to short supply of fresh vegetables and fruits during the long winter each year.* Crops here are generally only grown in summer and during winter, residents fail to get a regular supply of green vegetables and fresh produce from outside, as connectivity becomes restricted due to harsh weather and snowbound roads. However, there could be other factors as well, and the causes of anaemia here are yet to be scientifically ascertained.

MORIBUND GOVERNANCE

Even to those familiar with the anarchy that characterises India's public spaces, *the collapse of a newly-built shelter in a crematorium in Muradnagar, in U.P.'s Ghaziabad district, killing at least 24 people, is a shock. A group attending a funeral sheltered from rain in the structure, when its roof crumbled. The deaths and injuries have left families distraught. Since women are not part of funeral rites in crematoria, they came to know of the fate of the men much later.* A token solatium has been announced by the U.P. government for the next of kin of the dead and relief measures for others, but the loss of breadwinners who were in low-paying jobs has left the family members destitute. The State has shown great alacrity in arresting four people including a junior engineer, besides the contractor, citing culpable homicide, causing hurt and endangering lives. There are indications that it may use the National Security Act against some of the accused. Such measures cannot produce consistent improvement to governance, but the Yogi Adityanath government's favoured image is that of strong enforcement, which it has sought to demonstrate time and again by shooting down in 'encounters' those with a criminal record. That approach can do little to improve



U.P.'s standing. The Ghaziabad disaster is clearly the product of a system that lacks transparency and audits, and does not yield to quick fixes or measures meant to aid deterrence. Every year, the monsoon extracts a penalty in the form of collapsed buildings in several States. Just over three years ago, several people died when part of a bus stand caved in near Coimbatore in Tamil Nadu. Appalled by the 41 deaths in a building disaster at Bhiwandi, Maharashtra in September last year, the Bombay High Court framed questions for municipal authorities, including the basic premise: are those in authority completely helpless in preventing the collapse of structures and stopping the loss of life? The court also emphasised that citizens have a right to live in safe buildings and environment, within the meaning of Article 21. *What happened in Ghaziabad is particularly deplorable, as the cremation ground is an essential facility, and entirely within the ambit of public authorities to maintain. There are suggestions that the structure was poorly designed, lacking stability due to use of inferior materials, while the contractor had several projects assigned to him in the district. These and other charges, including favouritism involving politicians, are best probed by an independent judicial member.* Mr. Adityanath should realise that U.P., a laggard on many development metrics, can transform itself only through rule of law and efficient implementation of public projects. The horror of Muradnagar should impel his government to act.

HC PERMITS TRANSGENDER TO CONTEST PANCHAYAT POLL FROM WOMEN'S CATEGORY

The Bombay High Court's Aurangabad Bench has allowed a transgender to contest village panchayat polls in women's category, saying that such persons have the right to "self-perceived gender identity". A single judge Bench of Justice Ravindra Ghuge on January 2 allowed a petition filed by Anjali Guru Sanjana Jaan challenging the December 31, 2020, order passed by a returning officer that rejected her nomination for contesting a gram panchayat election in Jalgaon district. In the nomination form, the petitioner had chosen female gender and submitted the form to contest from a ward reserved for women's general category. The form was, however, rejected as the petitioner was a transgender and there was no transgender category in the present village panchayat elections. The petitioner's advocate, A.P. Bhandari informed the court that the petitioner has always chosen female gender for all purposes and will not be switching over to male gender anytime in the future. The court in its order said that the Union government has introduced the *Transgender Persons (Protection of Rights) Act, 2019, and has permitted a transgender person to have a right to self-perceived gender identity.* "In the present case, the petitioner has opted for the female gender as her self-perceived gender identity and also makes a statement that henceforth in her lifetime, she would not switch over to male gender driven by opportunism and would continue to opt for female gender, in future, save and except if there is a reservation provided for transgenders in public life," the court said. The court quashed the rejection order passed by the returning officer.

GOOGLE ASKED TO TAKE DOWN 280 LOAN APPS

Hyderabad Additional Commissioner of Police (Crimes and SIT) Shikha Goel said the police have identified 280 instant loan applications on Google Playstore and asked Alphabet Inc., which owns Google, to take down these apps as the companies operating them were found harassing and defaming borrowers. "Initially, the number of applications which we had asked to block were 69. Now, it has increased 280. As and when such apps come to our notice, we will inform Google," the Additional Commissioner said.



EMBRACING ENERGY EFFICIENCY (SHALU AGRAWAL - A PROGRAMME LEAD AT THE COUNCIL ON ENERGY, ENVIRONMENT AND WATER)

The Power Minister, R.K. Singh, recently announced the *Electricity (Rights of Consumers) Rules, 2020*. The rules lay down *uniform performance standards for power distribution companies (discoms) and make them liable to compensate consumers in case of violations*. The well-intentioned rules come at a time when *Indian discoms are struggling to manage their finances*. This is partly linked to drop in payment rates, as *consumers are struggling to pay their bills amid rising consumption and tight finances*. The Indian government has sanctioned liquidity relief to help discoms tide over this crisis, but these are just short-term fixes. *India's residential electricity consumption is expected to at least double by 2030. As households buy more electric appliances to satisfy their domestic needs, concerns about the ability of discoms to provide reliable supply at affordable rates will also rise*. Embracing energy efficiency can be a win-win solution as this can bring down household energy bills and reduce discoms' financial stress.

Tryst with energy efficiency

In recent years, India has seen significant adoption of energy-efficient appliances, especially those covered under the mandatory labelling programme, according to the India Residential Energy Survey conducted by the Council on Energy, Environment and Water and the Initiative for Sustainable Energy Policy. *The survey, covering nearly 15,000 households across 21 States, found that more than 75% of air-conditioners and 60% of refrigerators used in Indian homes were star-labelled. Further, nearly 90% of Indian homes used LED lamps or tubes. However, there has been limited uptake of energy-efficient ceiling fans and televisions. While 90% of homes use fans, only 3% have efficient fans. Similarly, 60% of our television stock comprises the big old energy-guzzling CRT (cathode ray tube) models. Desert coolers, used by 15% homes, are not even covered under the labelling programme. Significant efficiency gains are also possible for other appliances like water pumps and induction cook stoves.*

The way forward

First, we need to improve the availability and affordability of energy-efficient appliances. For instance, *despite a voluntary labelling scheme since 2009, less than 5% of ceiling fans produced in India are star-rated*. While the Bureau of Energy Efficiency (BEE) plans to bring ceiling fans under mandatory labelling from 2022, the high upfront cost will be another barrier. At present, the most efficient fans cost more than double the price of conventional models. We need innovative business models that can attract manufacturers to produce efficient technology at scale and bring it within purchasing capacity. Second, India needs a nationwide consumer awareness campaign on energy efficiency. *Only a fourth of Indian households are currently aware of BEE's star labels. While awareness levels are high among residents of metros and tier-1 cities, the majority in small towns and rural areas remain unaware*. To bridge this divide, we need a decentralised and consumer-centric engagement strategy. *State governments, discoms and retailers need to be at the forefront of our renewed efforts to create mass awareness about energy efficiency*. Finally, we need to monitor supply quality and changing consumption pattern on a real-time basis. As discoms in India deploy smart meters, these must be used to measure actual savings and demonstrate the benefits of energy-efficient devices to build consumer confidence. The smart metering network would also be crucial for enforcing consumer rights rules. India has tasted success in recent years by embracing energy efficiency. *The government's UJALA scheme transformed the market for LED*



bulbs, while also helping India reduce its annual carbon emissions by nearly 82 million tonnes. A similar focus towards other energy-efficient appliances would allow India to ensure 24x7 power for all.

AN ANTI-DISCLOSURE AMENDMENT THAT HITS PUBLIC HEALTH (PANKHURI AGARWAL - AN IP LAW RESEARCHER AND A MANAGING EDITOR AT SPICYIP, AN IP LAW BLOG)

The central government recently published the Patent (Amendment) Rules, 2020 (<https://bit.ly/3oaJZqZ>), amending the format of a statement that patentees and licensees are required to annually submit to the Patent Office disclosing the extent to which they have commercially worked or made the patented inventions available to the public in the country. The amendment has significantly watered down the disclosure format, and this could hamper the effectiveness of India's compulsory licensing regime which depends on full disclosure of patent working information. This in turn could hinder access to vital inventions including life-saving medicines, thereby impacting public health.

Disclosure of information

In exchange of a 20-year patent monopoly granted to an inventor, India's patent law imposes a duty on the patentee to commercially work the invention in India to ensure that its benefits reach the public. In fact, the purpose of granting patents itself is to not only encourage innovation but also ensure that the inventions are worked in India and are made available to the public in sufficient quantity at reasonable prices. A failure of this duty could trigger compulsory licensing (<https://bit.ly/3pKKhVI>) or even subsequent revocation (<https://bit.ly/3nc9Ptj>) of the patent under the Patents Act, 1970. Further, courts have refused an interim injunction in cases alleging infringement of a patent which has not been worked in India. Thus, the information on the extent of the working of the invention in India is critical for the effectiveness of these public interest measures provided by law to check abuse of patent monopoly (e.g. excessive pricing or scarce supply of the invention). Accordingly, section 146(2), a unique provision not found in patent laws of most other countries (<https://bit.ly/34ZOvB5>), requires every patentee and licensee to submit to the Patent Office an annual statement explaining the extent to which they have worked the invention in India.

The disclosure is to be made in the Form 27 format as prescribed under the Patent Rules, 2003. This statement is meant to help the Patent Office, potential competitors, etc. to determine whether the patentee has worked the invention in India and made it sufficiently available to the public at reasonable prices. Unfortunately, patentees and licensees as well as the Patent Office have blatantly disregarded this statutory requirement. Also, there has been significant pressure from multinational corporations and the United States government to do away with this requirement.

The PIL

The recent amendment to the form was made pursuant to a PIL (<https://bit.ly/3b08Jyt>) filed by Shamnad Basheer before the Delhi High Court in 2015. The PIL brought to the Court's attention the rampant non-filing and defective filing of Form 27 by patentees/licensees and sought a direction to the government to strictly enforce the patent working disclosure rules and take action against the violators. The PIL also called for a reform of Form 27 (<https://bit.ly/3pJfkl9>), arguing that the information it sought was grossly insufficient to ascertain the extent of the working of the patent.

Dilution of disclosure



The government acknowledged that the Form 27 format was problematic and provided an undertaking to the court to effect appropriate amendments. The court accordingly disposed of the PIL in 2018 (<https://bit.ly/2JjcXiK>), directing the government to complete the amendment process within the timelines mentioned in the undertaking. However, *in non-compliance of the court's order, the government published the amended form recently after a delay of almost two years. More importantly, instead of strengthening the form, the amendment has significantly weakened it further, thereby defeating the entire purpose of the amendment exercise. Instead of calling for more elaborate details of the information already sought in the Form as suggested in the PIL, the amended form has removed the requirement of submitting a lot of such important information altogether, thus damaging the core essence of the patent working requirement and the Form 27 format.* The form now requires the patentees and licensees to provide only for the following information: whether the patent has been worked or not; if the invention has been worked, the revenue or value accrued in India from manufacturing and importing the invention into India; and if it has not been worked, reasons for the same and the steps being taken towards working. They are no longer required to provide any information in respect of the quantum of the invention manufactured/imported into India, the licenses and sub-licenses granted during the year and the meeting of public requirement at a reasonable price. How will the data on merely the revenue/value accrued from manufacturing/importing the invention enable one to determine the extent to which it has been worked and its public requirement has been met? *The most basic data required for this assessment is the quantum or the total units of the invention manufactured/imported in India. It is the disclosure of this data by Bayer in Form 27 that played a crucial role in grant of India's first compulsory license to Natco for the anti-cancer drug Sorafenib/Nexavar (<https://bit.ly/3n8g9lx>). The deletion of the requirement of its disclosure is thus shocking and defeats the very purpose of this Form.* The removal of the requirement of submitting any licensing information, including the disclosure of even the existence of licenses (instead of seeking further details such as names of licensees/sub-licensees and the broad terms of the licenses as suggested in the PIL), means that the patentees/licensees can just self-certify that they've worked the patent without having to support the claim with the data on how they've done so, including through licensing/sub-licensing the patent. Further, *the omission to mandate disclosure of details such as the price of the invention, its estimated demand, the extent to which the demand has been met, details of any special schemes or steps undertaken by the patentee to satisfy the demand, etc., as recommended in the PIL, makes it extremely difficult to ascertain whether the invention has been made available to the public in sufficient quantity and at an affordable price.*

Impact on public interest

To conclude, *the government has significantly weakened the critical duty imposed by the law on patentees/licensees to disclose patent working information, so much so that it has defeated the very purpose of it. The lack of this information could prevent invocation of compulsory licensing and other public interest measures in cases of patent abuse and make certain inventions inaccessible to the public.* Such lack of accessibility in case of patented medicines could in turn have adverse consequences for public health of the country. Therefore, the government must reconsider its amendments to the form taking into account the PIL recommendations and re-amend it to restore as well as strengthen its spirit.



EXPERTS SUGGEST WAYS TO REDUCE HAZARDS POSED BY BIRDS TO FLIGHTS

Habitat management of birds, preventing breeding inside airports and discouraging people from dumping waste near airports and airfields can reduce hazards posed by birds to aircraft, a publication by the Salim Ali Centre For Ornithology and Natural History (SACON) points out. The document, “Best Practices for Mitigation of the Hazards Posed by Birds to Aircraft”, made public by SACON a few weeks ago, emphasises on habitat management at airfields.

The document states that water flows related to irrigation and water stagnation of any type should be prevented. It says that ornithological training for the Air Traffic Control (ATC) staff focussing on problematic birds would help them take adequate decision. The experts also recommend that a database be prepared of all bird species in the 10 km radius of airports. They suggest that there is a need for awareness creation and public participation in reducing the hazards posed by birds. The scientists also call for discouraging slaughterhouses and dumping of waste very close to airports to avoid carnivorous birds such as kites.

Species-wise suggestion

There are also species-wise recommendation for minimising hazards. The document suggests that *to discourage black kites, which are high soarers and pose danger during landing and take-off, airfields must be clear of any animal or bird carcasses. To discourage lapwing activity, appropriate short grass cover should be developed and maintained preferably at less than 15 cm height inside the airfield. The document suggests that to stop crows, food waste dumping areas around the airport must be relocated, while water stagnation should be cleared to keep away pigeons. To keep water fowls and water birds away from airports, the document calls for filing areas near the runway where water stagnates with earth and cover the banks of water bodies with nets.*

WHY IS RAIN IN JANUARY UNUSUAL FOR MAHARASHTRA, AND HOW WILL IT AFFECT STANDING CROPS?

Several parts of Maharashtra received moderate rainfall in the first week of January. The minimum temperatures in most parts of the state (barring Konkan) during this month hovers between 7 – 13 degrees. Officials at Regional Meteorological Centre (RMC), Mumbai, called the rainfall at this time of the year as uncommon, particularly for Mumbai. “The rainfall is mainly associated with the easterly winds,” said an official from RMC. An active easterly wind means that there is abundant moisture brought-in over the land from the Bay of Bengal, offering favourable conditions for cloud formation that triggers thunderstorms. As a result, the minimum temperatures across the state have jumped significantly above normal.

How common is rainfall over Pune and Maharashtra in January?

Normally, Pune and rest of Maharashtra record rainfall during the Southwest monsoon season – June to September. During the monsoon withdrawal in October, and on some rare occasions in November, it experiences thunderstorms. This means, the currently prevailing cloudy sky conditions and rains are both unusual and untimely. Decadal rainfall data maintained by the India Meteorological Department (IMD), Pune, suggests that between 2010 and 2021, Pune city has recorded rainfall (less than 1mm) in January only thrice. Even though insignificant in quantum, the city has recorded rainfall in January during 2010 (0.7mm), 2014 (0.7mm) and 2021 (3.6mm).



Except for 2021, Mumbai, Satara and Mahabaleshwar have never experienced a rainy January in the last one decade.

How will the present weather affect crops?

The prevailing weather is harmful for standing crops, especially fruits like grapes and strawberries, which are set to hit markets in less than two months from now. Many crops have reached their flowering and tillering stage, a time when the plants need adequate sunlight. The agri-meteorologists have advised the farmers against undertaking any irrigation during the next two days, given the rainy conditions and moisture prevalent in the atmosphere. Vegetable and fruit crops could suffer in their growth stages as the moisture can favour pests and similar attacks.

When will the cold conditions return?

According to the Extended Range Predictions of the IMD, the dominance of the easterly winds will remain for another week. Though its maximum impact in the form of heavy rain will be felt over parts of Tamil Nadu, Kerala and the southern peninsular regions, Maharashtra will remain under its influence. As a result, the minimum temperatures will continue to remain above normal and the trend will change after January 14. Meanwhile, the day temperatures would remain normal over the State, IMD officials said.

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HOW THE CAR SUBSCRIPTION SERVICE WORKS, AND WHO SHOULD OPT FOR IT

Maruti Suzuki India Limited announced that it will add three more car models, WagonR, S-Cross and Ignis, to its subscription programme launched in September 2020. With this the company is now offering 10 models across eight cities including Delhi-NCR, Bengaluru, Hyderabad, Pune, Mumbai, Chennai and Ahmedabad. Other models that are available under the company's subscription programme include Swift, Dzire, Vitara Brezza, Ertiga from Maruti Suzuki ARENA and Baleno, Ciaz, and XL6 from NEXA.

What is a subscription service?

The subscription service enables a customer to drive home a vehicle in lieu of a monthly fee and having full access to the vehicle without having to put down any down-payment. Subscribers instead need to pay an all-inclusive monthly fee that covers complete maintenance, insurance and roadside assistance. While Maruti announced its subscription service in September 2020, Hyundai started its subscription programme in March 2019. While it launched the scheme across its entire model range in association with Revv, Hyundai is currently offering it across 20 cities. Maruti teamed up with Orix Auto Infrastructure Services India, a subsidiary of Japan-based Orix Corp, to launch the subscription model across eight cities.

How does it work?

All you need to do is subscribe, pay a monthly fee and drive the car and pay for the fuel. All other costs including maintenance, insurance will be taken care by the leasing company and the OEM. The plan comes with tenure options of 24, 36, and 48 months and after the completion of subscription tenure, the customer can also opt to extend, upgrade the vehicle, or buy the car at market price. The subscription scheme offers two number plates. One is white number plate in which case the car is registered in customers name and hypothecated to leasing company and the other option is black number plate in which case the car is registered in leasing company's name.

How much do you pay and how does it compare against a car purchase?

The subscription does not come cheap. For a WagonR Lxi customers will have to pay an all-inclusive monthly subscription charge starting Rs 12,722 and that for a Ignis Sigma it starts at Rs 13,722 in Delhi (including taxes) for a tenure of 48 months. If you subscribe for a Maruti Suzuki Swift Lxi white number plate (registered in the name of customer) for a period of three years, one



needs to pay a monthly subscription fee of Rs 15,496, which means total subscription fee of Rs 5.57 lakh over a period of three years. However, if you go for purchase of the car, the on-road price of the car comes to over Rs 5.5 lakh and if you take a loan of Rs 4.5 lakh, your EMI on a 9% loan for three year period would come to Rs 14,300 per month. In case of purchase of car, one would have also paid around Rs 1 lakh in down payment, registration and insurance cost. Also, one would be required to pay for the annual maintenance, insurance renewal and for road assistance during the lifetime of the car. *So a quick check shows that even in case of subscription, the customer would have paid almost the equivalent of the on-road price of the car in subscription fee over a subscription term of three years.*

So who is going for it?

Car companies say that this is not for regular customers. It is a scheme for people who don't want that hassle of buying and selling the car every two to three years and in other cases customers who don't have the money for down payment. Also, people who move out on assignments to other cities for 2-3 years are looking at this as an option as it saves them from transporting their vehicle or from the hassle of buying or selling the car.

What happens with the car once it is returned to the leasing firm?

Industry insiders say that while currently the subscription scheme is available for new cars, once the cars are used and returned, they can be utilised for used car subscription service, which will be much cheaper.

HASTY APPROVAL, NO TRANSPARENCY

The two COVID-19 vaccines — Covishield and Covaxin — tested and manufactured in India by the *Pune-based Serum Institute and Hyderabad-based Bharat Biotech*, respectively, could have played a vital role in ending the pandemic in the country. However, *the regulator's haste and lack of transparency in approving the vaccines for "restricted" use do not inspire confidence. The regulator did not wait for sufficient safety and efficacy data to be collected and did not share information about the clinical trials before granting approval.* Transparency is vital for gaining people's trust so that they don't hesitate to take the vaccine. However, the conduct of the Indian regulator in no way helps in building trust in vaccines. If there is already some degree of apprehension about the safety and efficacy of COVID-19 vaccines, given the rushed manner in which the trials have been conducted, the opaque nature of the approval process has done little to mitigate such concerns. *Contrast this with the manner in which the U.S. Food and Drug Administration (FDA) and the U.K. regulator approved COVID-19 vaccines. The FDA had a live telecast of the advisory committee's examination of Pfizer's and Moderna's vaccine data before granting emergency use authorisation (EUA). It also made the detailed briefing document of the clinical trial of each vaccine and its assessment public.* The U.K. regulator also made the assessment of the two vaccines — by Pfizer and AstraZeneca — publicly available.

No efficacy data

The phase-2/3 trial of Covishield was carried out on 1,600 participants and was intended to study only safety and immunogenicity, as the details available on the clinical trial registry indicate. According to the informed consent document made available to trial participants, safety was to be tested on 1,200 participants and immunogenicity on 400 individuals. The trial did not study the



efficacy of the vaccine. *Approving Covishield based on safety and immunogenicity data from the trial in India and efficacy data from the U.K. might be sufficient for emergency use.* But it is imperative that Serum Institute collects efficacy data from the Indian trial before seeking full approval. Though no published data are available, *the U.K. regulator has found some evidence that efficacy improves when the second dose of the AstraZeneca vaccine is delayed.* Accordingly, it has recommended that the second dose be administered 4-12 weeks after the first. Serum Institute has wasted an opportunity to test the protection offered by the first dose and determine the efficacy of a delayed second dose and the best time to administer it. *It is now for the government to decide, without evidence, the timing of the second dose.* In the case of Covaxin, the phase-3 trial began in mid-November 2020. Since the second dose is administered 28 days after the first, *the median follow-up after the second dose would have been just a few days and that too from a very small number of participants.* In short, the approval for “restricted” use granted to Covaxin was not based on any efficacy data. What level of protection is offered by the vaccine and whether it protects against severe disease and prevents infection and transmission are all not known. *By giving approval to Covaxin without data on its efficacy, the Indian regulator has joined the ranks of China and Russia.* When the Chinese regulator approved CanSino Biologics’s vaccine that had not undergone a phase-3 trial, it at least limited its use for the military. In mid-November, three months after approval, Russia’s claim of 92% efficacy for Sputnik V was based on a review of just 20 COVID-19 cases. Also, the assertion that Covaxin will protect people against the new variant of the virus is not backed by evidence. No efficacy data against any SARS-CoV-2 virus strain are currently available. *What makes the approval for Covaxin all the more galling is the explicit permission to administer the vaccine in a “clinical trial mode”. This is nothing but a large-scale phase-3 clinical trial carried out on people belonging to the four priority groups consenting to receive the vaccine.* The following remain unknown: how informed the informed consent will be, who is going to inform the recipients about the intricacies of the “trial”, how well the “participants” are going to be monitored, and how the efficacy will be determined in the absence of a control arm. Nine global vaccine manufacturers issued a joint pledge last September that they would not seek premature approval from regulatory authorities. Bharat Biotech’s haste in seeking approval stands in contrast. The Indian regulator had earlier stipulated that at least 50% efficacy is necessary to grant EUA. Compare this with the manner in which the FDA upheld the sanctity of the approval process. Despite pressure from U.S. President Donald Trump to make vaccines available before election day, the FDA made it clear that it would require phase-3 data with a “median follow-up duration of at least two months after completion of the full vaccination regimen to assess a vaccine’s benefit-risk profile”. The FDA also said EUA would be granted only “based on data from a phase-3 trial that demonstrates the vaccine’s safety and efficacy in a clear and compelling manner”.

In 2019, a single mistake in preparing the measles, mumps, and rubella injection that led to the deaths of two infants in Samoa led to a sharp drop in vaccine uptake and a measles outbreak there. In India, a December 2018 study in 121 districts that have higher rates of unimmunised children found that 24% of children did not get vaccinated due to apprehension about adverse effects. If there is vaccine hesitancy among the four high-risk groups which will get vaccinated on priority, the companies and the regulator have themselves to blame.

- *Under India’s ‘Expanded Programme on Immunization’, which was initiated in 1978, the country has gathered experience in administering essential vaccines to children and pregnant women. In 1985, the programme was renamed ‘Universal Immunisation Programme’, under which about 12 different vaccines are provided through the government health system.*



DRY RUN

The dry run was carried out in one or two districts of the States and sessions were organised at district hospitals or medical colleges, community or primary healthcare centres, private health facilities, and at outreach sites in urban and rural areas. The dry run tested all the key steps in the COVID-19 vaccination process in a field environment. *The programme involved State administrators generating a 'user ID'. These 'IDs' were sent as a phone message to 25 volunteers at each session site. There are five such sites in each district. Each site is manned by a medical officer, who is entrusted with ensuring that these groups of 25 people are inoculated. Though no actual shots were administered, details of every person who is to get the jab are being punched into the Co-WIN application, which is part of the database that will keep track of every inoculation. The dry run involved dummy boxes of vaccines being brought to the centre; cold storage points were also checked to ensure coordination with the actual points of vaccine delivery. Once the session was completed, all data and feedback were relayed back to district, State, and eventually Central centres for feedback and analysis. The exercise began earlier this week in Assam, Andhra Pradesh, Gujarat and Punjab. States have already prepared lists of priority groups — healthcare workers, municipal workers, and Army and police personnel — and beneficiaries who had registered themselves on the Co-WIN app were sent SMSs informing them about the time and place of their "COVID-19 vaccination" as a mock drill.*

INDIA AND THE RACE FOR VACCINE DEVELOPMENT

India's vaccine manufacturing facilities are highly rated, globally. They have in-house research and development laboratories. However, they are concerned with research of a practical nature, for refining processes and products, rather than basic and fundamental research necessary for designing new vaccine candidates. Universities and Institutes of technologies are where such new ideas are incubated. *Commercial manufacturing facilities depend on profit for research funding. Universities and Institutes, funded by government and private philanthropic trusts, can pursue basic research without financial constraints.* When confronted with urgent need for vaccines, the wise approach would have been to establish a platform to bring the two groups together for fast-tracking vaccine candidate designs, pre-clinical and clinical trials, and up-scaling manufacture of promising vaccines. Unfortunately, during January through March there was no guidance or leadership from the Government of India for vaccine development. The expertise of the two global initiatives was not adapted for meeting India's needs or for asserting India's global leadership. Filling the vacuum, fortunately, a few private companies, on their own initiative, invested heavily in vaccine development and up-scaling of vaccine production. Consequently, two made-in-India vaccines are now under the national regulatory agency's assessment for suitability for emergency use authorisation. Neither vaccine has completed Phase 3 trials. One foreign vaccine company with a vaccine already registered in a few countries has also applied for similar approval. The regulatory agency has not yet approved any of them, as of December 31, 2020. China, by political decision and Russia, by temporary registration, initiated a national vaccination programme with indigenous vaccines by or before September, even before Phase 3 trials were completed. *By the end of December 2020, thirty-three countries other than China and Russia had already started vaccinating their citizens with vaccines with proper regulatory agency approvals after they had completed very large Phase 3 trials.* Four countries began vaccinations in the first half of December and twenty-nine countries began the process in the second half of December.



Unique opportunity

India had the unique opportunity not only to lead the world in vaccine development and supply, but also in designing a vaccination strategy and platform for rolling out vaccine to the public. India's model would have been a guide not only for SAARC countries but also for many Asian and African countries with rather weak health management systems. That opportunity was entirely in the hands of the government. Utilising these two opportunities, India could have partly overcome the economic downturn due to the pandemic. The Government of India, Science Advisory bodies, economic advisors, Academia, Medical and Science Academies and Biotechnology experts ought to do some serious introspection now, and analyse how and why India missed this opportunity, in spite of the Prime Minister's exhortation to scientists and entrepreneurs to "Make in India" for wealth creation and prosperity. We lacked neither competence nor infrastructure, but lulled ourselves into overconfidence and complacency. We were slow, but had we been steady, we ought to have won the race.



DreamIAS



BUSINESS & ECONOMICS

WORLD FOOD PRICE INDEX RISES FOR SEVENTH STRAIGHT MONTH IN DEC.

World food prices rose for a seventh consecutive month in December, with all the major categories, barring sugar, posting gains last month, the United Nations food agency said. The Food and Agriculture Organization's (FAO) food price index, which measures monthly changes for a basket of cereals, oilseeds, dairy products, meat and sugar, averaged 107.5 points last month versus 105.2 in November. For the whole of 2020, the benchmark index averaged 97.9 points, a three-year high and a 3.1% increase from 2019. It was still down more than 25% from its historical peak in 2011. Vegetable oil prices continued recent strong gains, jumping 4.7% month-on-month in December after surging more than 14% in November. For the whole of 2020, the index was up 19.1% on 2019. The cereal price index posted a more modest 1.1% rise in December from the month before. For all of 2020, the index averaged 6.6% above 2019 levels. Export prices for wheat, maize, sorghum and rice all rose in December, moving higher in part due to concerns over growing conditions and crop prospects in North and South America as well as Russia, the *Rome-based FAO* said. The dairy index climbed 3.2% on the month, however, over the whole of 2020, it averaged some 1% less than in 2019. *Bucking the rises in other indices, average sugar prices dipped by 0.6% in December.* Last month, the FAO revised down its harvest forecast for the 2020 cereal season for a third month running, cutting it to 2.74 billion tonnes from a previous 2.75 billion tonnes.

VIETNAM BUYS INDIAN RICE FOR FIRST TIME IN DECADES

*Vietnam, the world's third biggest exporter of rice, has started buying the grain from rival India for the first time in decades after local prices jumped to their highest in nine years amid limited domestic supplies, four industry officials told Reuters. The purchases underscore tightening supplies in Asia, which could lift rice prices in 2021 and even force traditional buyers of rice from Thailand and Vietnam to switch to *India — the world's biggest exporter of the grain.* Indian traders have contracted to export 70,000 tonnes of 100% broken rice for January and February shipments at about \$310 per tonne on a free-on-board basis, the industry officials said. "Indian prices are very attractive. The huge price difference is making exports possible." Vietnam's 5% broken rice is offered at about \$500-\$505 per tonne, compared to Indian prices of \$381-\$387. *Dwindling supplies and continued Philippine buying lifted Vietnamese rice export prices to a fresh nine-year high. In 2020 India exported a record 14 million tonnes of rice,* provisional data from the trade Ministry showed.*

TRADE DEFICIT GROWS TO \$15 BN IN DEC.

*Contracting for the third straight month, India's exports slipped marginally by 0.8% in December 2020 even as the trade deficit widened to \$15.71 billion due to the rise in imports. Exports in December 2020 stood at \$26.89 billion, as compared to \$27.11 in the same month of 2019, according to the preliminary data released by the Commerce Ministry on Saturday. The rate of contraction in the country's outbound shipments has improved against a decline of 8.74% in November, mainly due to the increase in shipments of certain sectors such as gems and jewellery, engineering and chemicals. *After a gap of nine months, imports in December recorded a positive growth of 7.6% at \$42.6 billion. In February 2020, it had registered a rise of 2.48%.* "India is thus a net importer in December 2020, with a trade deficit of \$15.71 billion, as compared to a trade deficit of \$12.49*



billion, widened by 25.78%," the Commerce Ministry said in a statement. The trade deficit (the difference between imports and exports) at \$15.71 billion was highest since July 2020. *The country had witnessed trade surplus in June 2020.* In April-December 2020-21, the country's merchandise exports contracted by 15.8% to \$200.55 billion, as compared to \$238.27 billion in the same period last fiscal. Imports during the nine months of the current fiscal declined by 29.08% to \$258.29 billion. It was \$364.18 billion in April-December 2019-20. In December 2020, oil imports declined by 10.37% to \$9.61 billion. During April-December, the imports dipped by 44.46% to \$53.71 billion, the Ministry said.

Major commodities which have recorded positive growth in exports during the month under review include oil meals (192.60%), iron ore (69.26%), carpets (21.12%), pharmaceuticals (17.44%), spices (17.06%), electronic goods (16.44%), fruits and vegetables (12.82%), and chemicals (10.73%). The other commodities in the positive terrain include cotton yarn/fabrics/ made-ups, handloom products (10.09 %), rice (8.60%), meat, dairy and poultry products (6.79%), gems and jewellery (6.75%), tea (4.47%), and engineering goods (0.12%). Sectors that registered negative growth include petroleum products (-40.47%), oil Seeds (-31.80%), leather and leather manufactures (-17.74%), coffee (-16.39 %), ready-made garments of all textiles (-15.07%), man-made yarn/fabrics/made-ups (-14.61%), marine products (-14.27%), cashew (-12.04%), and tobacco (-4.95%).

The major commodities imported with positive growth in December 2020 include pulses (245.15%), gold (81.82%), vegetable oil (43.50%), chemicals (23.30%), electronic goods (20.90%), machine tools (13.46%), pearls, precious and semi-precious stones (7.81%), and fertilisers (1.42%). Sectors which recorded negative growth in December 2020 were silver, newsprint, transport equipment, cotton raw and waste, coal, coke and briquettes.

WHY IS GAIL CONSIDERING A SHARE BUYBACK?

The board of directors of GAIL, India's largest gas distributor, is set to consider a share buyback which will result in the distribution of surplus reserves to shareholders including the Government of India. The Centre has reportedly asked a number of public sector units to issue buybacks to help shore up its finances, which have been hit by the pandemic. In a filing to stock exchanges, the company said that its board would meet on January 15 to consider share buyback and payment of interim dividend for the financial year ending March 2021.

What is a share buyback?

A share repurchase or buyback is a decision by a company to purchase its own stock from the market. Such a move reduces the number of outstanding shares of the company and tend to push up their price and is often undertaken when management considers the company's shares undervalued. It is also a key way to transfer surplus earnings to shareholders and tends to lead to an increase in share prices. Shares of GAIL rose over 5% to Rs 143.4 in intraday trade on the back of the repurchase announcement.

How will this benefit the government?

The government holds 52.1% stake in GAIL. In a recent share repurchase offer by NTPC, the government of India sold shares worth over Rs 1,066 crore back to the company accounting for



around 47% of the shares accepted under the repurchase offer. The government also received Rs 1,377 crore from a share buyback offered by NMDC taking up over 99% of the buyback offer.

WHAT ARE SPECTRUM AUCTIONS, AND WHAT CAN HAPPEN IN THE UPCOMING AUCTION?

The Department of Telecommunications (DoT) said on Wednesday (January 6) that auctions for 4G spectrum in the 700, 800, 900, 1,800, 2,100, 2,300, and 2,500 MHz bands will begin from March 1. Licence holders have until February 5 to submit their applications.

What are spectrum auctions?

Devices such as cellphones and wireline telephones require signals to connect from one end to another. These signals are carried on airwaves, which must be sent at designated frequencies to avoid any kind of interference. *The Union government owns all the publicly available assets within the geographical boundaries of the country, which also include airwaves.* With the expansion in the number of cellphone, wireline telephone and internet users, the need to provide more space for the signals arises from time to time. To sell these assets to companies willing to set up the required infrastructure to transport these waves from one end to another, the central government through the DoT auctions these airwaves from time to time. These airwaves are called spectrum, which is subdivided into bands which have varying frequencies. *All these airwaves are sold for a certain period of time, after which their validity lapses, which is generally set at 20 years.*

Why is spectrum being auctioned now?

The last spectrum auctions were held in 2016, when the government offered 2,354.55 MHz at a reserve price of Rs 5.60 lakh crore. Although the government managed to sell only 965 MHz – or about 40 per cent of the spectrum that was put up for sale – and the total value of bids received was just Rs 65,789 crore, *the need for a new spectrum auction has arisen because the validity of the airwaves bought by companies is set to expire in 2021.* In the spectrum auctions scheduled to begin on March 1, the government plans to sell spectrum for 4G in the 700, 800, 900, 1,800, 2,100, 2,300, and 2,500 MHz frequency bands. The reserve price of all these bands together has been fixed at Rs 3.92 lakh crore. Depending on the demand from various companies, the price of the airwaves may go higher, but cannot go below the *reserve price.*

Who are likely to bid for the spectrum?

All three private telecom players, Reliance Jio Infocomm, Bharti Airtel, and Vi are eligible contenders to buy additional spectrum to support the number of users on their network. Apart from these three, *new companies, including foreign companies, are also eligible* to bid for the airwaves. *Foreign companies, however, will have to either set up a branch in India and register as an Indian company, or tie up with an Indian company to be able to retain the airwaves after winning them.*

What will the bidding cost the three existing companies?

Both Bharti Airtel and Vi have repeatedly expressed their inability to shell out a lot of money – either to buy new spectrum or to renew the old spectrum licences that they already hold. *Most analysts expect Bharti Airtel to renew some of its old spectrum, but to not bid for new spectrum at all. On Vi, all analysts expect that the company may not participate at all in this auction, given the cash flow constraints it is facing. Analysts, however, expect Mukesh Ambani-led Reliance Jio to act*



differently. According to Credit Suisse, Reliance Jio is likely to not only renew the 44 MHz spectrum that it had bought from Reliance Communication, but to also bid for additional spectrum in the 55 MHz band owned by the latter in the upcoming auctions. To this end, Reliance Jio will incur a total capital expenditure of Rs 240 billion at reserve prices, and would require to make an upfront payment of nearly Rs 60 billion, if it were to opt for the long term deferred payment plan.

How will the deferred payment plan work?

As part of the deferred payment plan, bidders for the sub-1 GHz bands of 700, 800 and 900 MHz can opt to pay 25 per cent of the bid amount now, and the rest later. In the above-1 GHz bands of 1,800, 2,100, 2,300, and 2,500 MHz frequency bands, bidders will have to pay 50 per cent upfront, and can then opt to pay the rest in equated annual instalments. The successful bidders will, however, have to pay 3 per cent of Adjusted Gross Revenue (AGR) as spectrum usage charges, excluding wireline services. “In our view, spectrum auction in India has turned into a *buyer’s market*. We expect minimal competition, with operators picking up spectrum that provides best value for money instead of focusing on renewing all their expiring spectrum,” Kunal Vora of Equities Research said in a report.

WHY AMAZON IS BUYING PLANES TO EXPAND ITS AIR FLEET

In a bid to expand its air cargo operations and delivery network, e-commerce major Amazon has purchased its first fleet of planes — 11 used Boeing 767-300 jets from the US’ Delta Air Lines and Canadian air-carrier WestJet. While the company launched its air operations in 2016, all of its planes were leased at the time. Since then, it has invested heavily to build its growing air freight network. In an interview with Bloomberg, Amazon said it expects to have a fleet of over 85 planes delivering products across the world by the end of 2022.

According to an estimate from Morgan Stanley in 2019, the online retail giant is delivering more than half of all its packages across the United States, with the other half being delivered by third-party delivery providers like United Parcel Service Inc (UPS). Handling its own logistics works out cheaper for the company than outsourcing deliveries, experts say. As its air fleet continues to grow, however, some experts warn that the company could pose a significant threat to its delivery partners. Notably, in 2019, FedEx announced that it would not be renewing its US air-delivery contract with Amazon.

But, why now?

Amazon purchased the planes at a time when the airline industry is struggling to stay afloat as aircraft costs plummet and ticket sales are on the decline due to travel restrictions induced by the Covid-19 pandemic. Several airlines, including Delta, have started speeding up the retirement of their aircraft to help cut costs. Meanwhile, Amazon has witnessed a massive surge in online sales as people around the world — who were confined to their homes for much of 2020 — increasingly turned to the e-retailer to purchase products during the coronavirus pandemic, CNBC reported.

What about Amazon’s pre-existing air network?

While this is the first time the Jeff Bezos-owned company has acquired its own flights, it has been leasing planes to deliver goods to consumers around the world since 2016, when it launched its air cargo service, now called Amazon Air. Amazon has been building up its own delivery operation,



both in the air and on ground, in an effort to speed up its delivery of packages — particularly in the case of its Prime service, which promises overnight and two-day shipping. Currently, the Seattle-based company's air fleet comprises over 70 planes — a figure, which is expected to grow to at least 200 by 2028, according to a report published by Chicago's DePaul University last year.



DreamIAS



LIFE & SCIENCE

WHY IS THERE RENEWED INTEREST IN PROXIMA CENTAURI, THE CLOSEST STAR TO THE SUN?

Astronomers running the world's largest initiative to look for alien life have recently picked up an "intriguing" radio wave emission from the direction of Proxima Centauri, the closest star to our Sun, The Guardian reported. The news has sparked renewed interest in Proxima Centauri, one of whose planets is believed to revolve in the star's habitable zone, giving rise to the possibility that it could have, or does, sustain life.

The mysterious radio signal

Astronomers at the \$100 million Breakthrough Listen project, started by the legendary physicist Stephen Hawking, regularly spot blasts of radio waves using two powerful telescopes– the Parkes Observatory in Australia or the Green Bank Observatory in the US. All of their findings so far, though, have been attributed either to natural sources or interference caused by humans. Unlike the project's previous findings, the beam picked up from the direction of Proxima Centauri–which has been named BLC1 or Breakthrough Listen Candidate 1– has two interesting characteristics. First, its signal frequency is 982 Mhz– a narrow-band value that is not transmitted by human-made spacecraft or satellites. Neither do we know of a natural astronomical phenomenon that can generate such a radio signal. Second, the apparent shift in this frequency is reportedly consistent with the movement of the planet. This raises the possibility that the emission could be an alien "technosignature", meaning something which provides evidence of alien technology, and could have arisen from some form of advanced extraterrestrial intelligence (ETI), as per the Scientific American. According to the Guardian, the beam was found in the archival data of the Parkes observatory, which picked up the beam in April and May last year. It has not been spotted again. Scientists are currently working on a paper explaining BLC1, which is expected to be released early next year. There are also reasons to believe that the signal might not mean 'aliens'. Since only the Parkes observatory has picked up the signal, which has not appeared since, it would be impossible to verify that it came from Proxima Centauri. Another possibility could be that the signal could have been caused by something behind Proxima Centauri, or by a natural phenomenon whose existence we so far do not know of.

The interest in Proxima Centauri

Proxima Centauri is 4.2 light-years away from the Sun – considered a close distance in cosmic terms. Its mass is about an eighth of the Sun's, and it is too dim to be seen with the naked eye from Earth. Proxima b, one of the two planets that revolve around the star, is the subject of significant curiosity. Sized 1.2 times larger than Earth, and orbiting its star every 11 days, Proxima b lies in Proxima Centauri's "Goldilocks zone", meaning the area around a star where it is not too hot and not too cold for liquid water to exist on the surface of surrounding planets. To give an example, the Earth is in the Sun's Goldilocks zone. However, this does not mean for sure that water is present on Proxima b. It could also be hostile to life, if its atmosphere has been stripped away by solar flares from Proxima Centauri. Proxima b is also tidally locked with its star, just like the Moon is to Earth– meaning one side of the planet has daylight forever, while the other side is always dark. Scientists say that it is difficult to imagine that Proxima b could have a stable climatic system under such conditions.



- *An international team of scientists has collected the first possible radio signal from a planet beyond our solar system, emanating from an exoplanet system about 51 light-years away. Using the Low Frequency Array (LOFAR), a radio telescope in the Netherlands, the researchers uncovered emission bursts from the Tau Bootes star-system hosting a so-called hot Jupiter, a gaseous giant planet that is very close to its own sun.*

A MISSING SUPERMASSIVE BLACK HOLE THAT HAS LEFT ASTRONOMERS BAFFLED

A supermassive black hole, which is estimated to weigh up to 100 billion times the mass of the Sun, is seemingly missing, leaving astronomers perplexed. Scientists have been looking for the black hole using NASA's Chandra X-ray Observatory and Hubble Space Telescope, and have so far found no evidence that it is anywhere to be found. Not unexpectedly, many social media users have expressed confusion about the black hole's whereabouts, which is supposed to be at the centre of a far-off galaxy.

The 'missing' black hole

The black hole is supposed to be located in Abell 2261, an enormous galaxy cluster that is about 2.7 billion light-years away from our planet. One light-year is the distance that a beam of light travels in one Earth year, which is 9 trillion km. On the scale of the Universe, astronomers measure the distance from stars and galaxies in the time it takes for light to reach us. So, when we look at a celestial object, we are looking at how it appeared that long ago in the past. At 2.7 billion light-years away, the Abell galaxy is at an overwhelmingly large distance away from us.

So, what could have happened?

Every large galaxy in the universe has a supermassive black hole at its centre, whose mass is millions or billions of times that of the Sun, according to NASA. The black hole at the centre of our galaxy—the Milky Way— is called Sagittarius A, and is 26,000 light-years away from Earth.* Scientists have been using data gathered in 1999 and 2004 to look for the centre of the Abell galaxy, but have so far been unable to find its black hole. A reason for this, according to a team at the University of Michigan in the US, could be that Abell's black hole has been ejected from the centre of the galaxy. The researchers, who have based their reasoning on 2018 data from NASA's Chandra Observatory, posit that this may have happened because of the merging of two smaller galaxies to form Abell—a process in which both of their black holes merged to form an even bigger black hole.

'Recoiling' black holes

When two black holes merge, they release what are known as gravitational waves— invisible ripples travelling at the speed of light, which squeeze and stretch anything in their path. As per the theory of gravitational waves, during such a merger, when the amount of waves generated in one direction is stronger than another, the new big black hole can be sent away from the centre of the galaxy into the opposite direction. This is known as a "recoiling" black hole. So far, though, scientists are yet to find definitive evidence for recoiling black holes, and are still to discover whether supermassive black holes can merge and release gravitational waves. *As of now, only mergers of significantly smaller black holes have been verified.* Should the hypothesis by the Michigan researchers turn out to be true, it would mean a major breakthrough in astronomy.



WHAT IS WINTER SOLSTICE, WHICH MADE DECEMBER 21 THE SHORTEST DAY OF THE YEAR?

Today, December 21, is Winter Solstice, the shortest day of the year in the Northern Hemisphere. In the Southern Hemisphere, conversely, today is Summer Solstice — in places like Australia, New Zealand and South Africa, therefore, December 21 is the year's longest day. This situation will be reversed six months from now — on June 21, 2021, the Northern Hemisphere will see the Summer Solstice when the day will be the year's longest. And the Southern Hemisphere will see the year's shortest day — or longest night.

Why are the hours of daylight not the same every day?

The explanation lies in Earth's tilt. And it's not just the Earth — every planet in the Solar System is tilted relative to their orbits, all at different angles. The Earth's axis of rotation is tilted at an angle of *23.5° to its orbital plane*. This tilt — combined with factors such as Earth's spin and orbit — leads to variations in the duration of sunlight that any location on the planet receives on different days of the year. The Northern Hemisphere spends half the year tilted in the direction of the Sun, getting direct sunlight during long summer days. During the other half of the year, it tilts away from the Sun, and the days are shorter. Winter Solstice, December 21, is the day when the North Pole is most tilted away from the Sun. *The tilt is also responsible for the different seasons that we see on Earth.* The side facing the Sun experiences day, which changes to night as Earth continues to spin on its axis. *On the Equator, day and night are equal. The closer one moves towards the poles, the more extreme the variation.* During summer in either hemisphere, that pole is tilted towards the Sun and the polar region receives 24 hours of daylight for months. Likewise, during winter, the region is in total darkness for months. The Earth's tilt helps define some familiar imaginary lines, which are also key to determining when a Solstice occurs. These are latitudes, which are a measure of a location's distance from the Equator. *At latitudes of 23.5° (matching the tilt) are the Tropics of Cancer and Capricorn, north and south of the Equator. At 66.5° (or 90° minus 23.5°) are the Arctic and Antarctic Circles, to the north and south. It is at latitudes higher than 66.5° (in either direction) that days of constant darkness or light occur.*

In Vedic tradition, the northern movement of the Earth on the celestial sphere is implicitly acknowledged in the Surya Siddhanta, which outlines the Uttarayana (the period between Makar Sankranti and Karka Sankranti). Hence, Winter Solstice is the first day of Uttarayana.

HOW PRIVATE IS WHATSAPP, WHAT CAN FACEBOOK SEE, AND SHOULD YOU LOOK AT ALTERNATIVES?

Amid continuing concerns over its new privacy policy released a few days ago, WhatsApp on Tuesday had to clarify yet again that the policy changes nothing for those messaging friends and family. It also clarified that in some conditions, business messages — “different than messaging with your family or friends” — can be read by Facebook and could be used for marketing purposes. The latest clarification brings in what seems like a differentiation between “messages with friends or family” and “messages with a business”. It says the new privacy policy pertains to the latter alone and the former remains unchanged.



What does that mean for someone who uses WhatsApp only to chat with friends and family?

Neither WhatsApp nor Facebook can “see your private messages or hear your calls”. Personal messages are protected by end-to-end encryption and will continue to be so.

WhatsApp does not keep logs of who anyone is messaging or calling, because it considers a data dump of this kind a “privacy and security risk”.

WhatsApp cannot see a location you have shared with a friend as that too is protected by end-to-end encryption.

WhatsApp does not share a user’s contacts with Facebook, or any other app.

No data from groups will be shared with Facebook for ad purposes and all the communication within is end-to-end encrypted. So, if you are a member of an office, RWA or school group, there is nothing to worry as nothing changes for you.

How are business messages different?

The interplay between WhatsApp and Facebook, its parent company, becomes more visible when it comes to messages to business, where the new privacy changes have been applied. WhatsApp has clarified that some “large businesses” might need to use “secure hosting services from Facebook to manage WhatsApp chats with their customers, answer questions, and send helpful information like purchase receipts”. And “whether you communicate with a business by phone, email, or WhatsApp, it can see what you’re saying and may use that information for its own marketing purposes, which may include advertising on Facebook”. But, WhatsApp says it will “clearly label conversations with businesses that are choosing to use hosting services from Facebook”. These labels are already visible when you are communicating with a business, and users will now need to decide whether they want to be in a conversation, the details of which could be used to show them targeted ads. Using the Shops features on WhatsApp could also open up your preferences for targeted ads on other Facebook products such as Instagram. So clearly, *business messaging, which WhatsApp has been gradually activating across many markets, will ultimately results in advertisements based on preferences you have shown to the business.* If you use WhatsApp for a business and have a list of clients, the business on the other side too will see the conversation and know your preferences. This could be used to show you ads on Facebook platforms. If you are the business owner, you could use some of the insights to run ads targeting your customers on Facebook and other services.

What changes for you in these scenarios?

IF YOU ARE ON FACEBOOK: Nothing changes when it comes to personal chats. However, if you are engaged in conversations with a business, you might start seeing related ads on Facebook and other company products such as Instagram.

... OR IF YOU ARE NOT: Nothing changes for you as a WhatsApp user, as you cannot be shown ads on Facebook.

IF YOU HAVE A LARGE FOLLOWING: WhatsApp remains a secure platform for all your personal conversations with individuals and groups. However, it might be a good idea to be cautious while using the business features as many people could have access to your preferences.



... OR IF YOU DO NOT: Your regular WhatsApp conversations remain safe and end-to-end encrypted.

Do my Facebook friends get to know what my WhatsApp contacts are sending me?

No. Your conversations are encrypted, and neither WhatsApp nor Facebook can see what is being discussed. This applies to all your groups as well.

Which countries have a different policy?

While there is data sharing with Facebook even in the European Union, users there get more control. That's because the EU has a different privacy policy on any software product compared to the rest of the world. EU's General Data Protection Regulation (GDPR) is one of the strictest in the world and ensures that consumers have the full rights on their data and how that data is processed, and can even demand erasure of information. According to WhatsApp's own policy for EU, consumers have "the right to access, rectify, port, and erase your information, as well as the right to restrict and object to certain processing of your information." *While the WhatsApp privacy policy in the EU also talks about data sharing with Facebook, consumers there get a special setting called "Managing and Retaining Your Information", with which they can rectify, update or erase information that the platform controls. This option is not available elsewhere.* Consumers in the EU can even withdraw their consent to WhatsApp for processing of data, thanks to GDPR. Interestingly, after the EU antitrust authorities in 2017 fined Facebook 110 million euros for misleading regulators during a 2014 review of the WhatsApp takeover, the social network had told these regulators it technically wasn't possible to combine WhatsApp data with its other services.

So, why doesn't India get such a setting with extensive controls?

India lacks a regulatory authority. Until the Personal Data Protection Bill becomes law, it will be hard to police tech companies on how user data should be processed. WhatsApp's new privacy policy applies to every country, including the US, and users will have to accept the terms and conditions to continue using the service.

How does one read the update in the context of the regulatory scrutiny Facebook faces in the US and EU?

The regulatory heat makes the timing of this update interesting. In the US, the Federal Trade Commission (FTC) has filed a lawsuit against Facebook over antitrust, anti-competitive policies. It has also put Facebook's acquisition of WhatsApp and Instagram under the scanner. These two apps have helped Facebook dominate the social media and messaging space in the last five years. *If the FTC wins its cases, it wants Facebook to sell off both WhatsApp and Instagram, which could prove disastrous for the company. Further, it would mean that Zuckerberg's vision of interoperability among other apps in the bouquet would come to an end. In his scheme of things, a WhatsApp user should be able to message someone on Messenger, even if they don't use that app. This interoperability will be limited to Facebook's own set of products.* The EU is also investigating Facebook over claims that it trampled competition with the help of the vast troves of user data. The company has resisted EU's demands for several documents and filed a lawsuit against this last year as well.



Should I stay on WhatsApp or migrate to another app?

There is no need to move out of WhatsApp if you use it primarily to communicate with friends and family. However, there seems to be an exodus happening. Signal is topping the charts on Apple's App Store and it appears to be driven by downloads from India, according to a tweet from the company. *Signal too offers end-to-end encryption (E2E), similar to WhatsApp, but it is run by a non-profit co-founded by WhatsApp founder Brian Acton. Signal's E2E protocol is actually used by WhatsApp. It has a number of features that WhatsApp offers, but some such as group video calling are still in the beta stage. It also lacks some of the convenience WhatsApp offers such as the ability to back up all your chats to a third-party service such as Google Drive or iCloud, or the ability to connect to business accounts. Another encrypted messaging app is Telegram, created by Russian brothers Nikolai and Pavel Durov, with features similar to WhatsApp. It is more evolved than Signal because it has been around since 2013.* Telegram groups can be made visible to all or keep private. The biggest advantage of WhatsApp is that it is ubiquitous and everyone on your contact list is using it. On Signal, even now, you have to go looking for users to chat with. But the app will make sense if an entire group decides to move conversations there. If you are thinking of quitting WhatsApp but still continuing to use Facebook products such as Messenger, Instagram and Facebook itself, then the exercise will be pointless.

SIGNIFICANCE OF WORLD'S OLDEST CAVE PAINTING DISCOVERED IN INDONESIA

A team of archaeologists has discovered what may be the world's oldest known cave painting dating back to more than 45,000 years. The cave painting depicts a wild boar endemic to the Sulawesi island of Indonesia, where the painting was found. The central Indonesian island, which occupies an area of over 174,000 sq. km, is situated between Asia and Australia and has a long history of human occupation, the archaeologists note in their findings that have been published in the journal Science Advances.

So what is the significance of the cave painting?

The archaeologists note that the dated painting of the Sulawesi warty pig seems to be the world's oldest surviving representational image of an animal. The team came across this painting in the *limestone cave of Leang Tedongnge* while conducting field research. The painting was made using red ochre pigment and depicts a pig with a short crest of upright hairs and a pair of horn-like facial warts in front of the eyes, who is likely observing a social interaction or fight between two other warty pigs. *These pigs have been hunted by humans for tens of thousands of years and are the most commonly depicted animal in the ice age rock art of the island, which suggests that they have long been used as food and form a "focus of creative thinking and artistic expression" for people of that time,* doctoral researcher Basran Burhan who discovered the cave art was quoted as saying in a press release. The book, "The Archaeology of Sulawesi", published by the Australian National University press in 2018 mentions that *the Sulawesi island contains some of the oldest directly dated rock art in the world and also some of the oldest evidence for the presence of hominins beyond the southeastern limits of the Ice Age Asian continent. Hominins include modern humans, extinct human species and our immediate ancestors. Homo sapiens are the first modern humans who evolved from their hominid predecessors between 200,000-300,000 years ago. It is estimated that these modern humans started migrating outside of Africa some 70,000-100,000 years ago. Even so, it is not yet clear as to when modern humans first colonised Sulawesi. So far, the earliest dated proxy evidence for the presence of modern humans in Sulawesi consists of prehistoric rock art, researchers note. In*



2019, a cave wall depiction of a pig and buffalo hunt became the world's oldest recorded story. This rock painting was also found in Sulawesi by the same team of archaeologists who claimed that it was at least 44,000 years old. Before this finding, rock art found in European sites dating back to 14,000-21,000 years was considered to be the oldest. These findings were published in the journal Nature and were ranked as one of the top-10 scientific breakthroughs of 2020 by Science magazine.

How did the archaeologists date it?

Maxime Aubert from the Griffith Centre for Social and Cultural Research, who is the co-author of the study and who sampled the art for the analysis, told AFP that the painting was first discovered by Burhan in 2017 as part of surveys the team was carrying out with the Indonesian authorities. While dating rock art can be challenging, *for this painting archaeologists used a method called U-series isotope analysis, which uses calcium carbonate deposits that form naturally on the cave wall surface to determine its age.* Aubert was quoted as saying in a Griffith University press release that for this painting, they used a calcium carbonate deposit, also referred to as a “cave popcorn”, that had formed on the rear foot of one of the pig figures. Aubert removed this deposit from the painting and when it was analysed, they were able to figure out a minimum age for the painting at around 45,500 years, which means the painting was made before this.

KIDS CAN IDENTIFY EMOTIONS ON MASKED FACES

When masks cover a significant part of the face, how well can people understand the facial expressions of the people wearing them? Children can still understand, to an extent, the expressions on masked faces, according to a new study published in PLOS One. “We now have this situation where adults and kids have to interact all the time with people whose faces are partly covered, and a lot of adults are wondering if that’s going to be a problem for children’s emotional development,” researcher Ashley Ruba said in a statement on the research released by the University of Wisconsin–Madison. Psychologists at UW–Madison showed more than 80 children, ages 7 to 13, photos of faces that were unobstructed, covered by a surgical mask, or wearing sunglasses. The faces displayed sadness, anger or fear. From a list of six labels, the children were asked to assign an emotion to each face. When the faces were uncovered, the children were correct as often as 66%. This was well above the probability (about 17%) of guessing one correct emotion from the six options. With a mask in the way, they correctly identified sadness about 28% of the time, anger 27% of the time, and fear 18% of the time. “Not surprisingly, it was tougher with parts of the faces covered. But even with a mask covering the nose and mouth, the kids were able to identify these emotions at a rate better than chance,” Ruba said. *Sunglasses made anger and fear difficult to identify, suggesting the eyes and eyebrows are important to those facial expressions. Fear, often confused with surprise, was also the trickiest for children to spot behind a mask.* The faces were revealed to the children slowly, with scrambled pixels falling into their proper place over 14 stages. This was to simulate the way real-world interactions may require piecing things together from odd angles or fleeting glimpses.

THE CLIMATE POLICY NEEDS NEW IDEAS (MUKUL SANWAL - FORMER DIRECTOR OF THE UNITED NATIONS FRAMEWORK CONVENTION ON CLIMATE CHANGE)

2021 will be the year for a new global climate policy and India has the soft power to bring together the high and low emitters. Among the ‘major economies’, India will meet its Paris Agreement target for 2030. Its per capita emissions are one-third of the global average and it will remain



within its share of ecological space. In an urbanised world, two-third of emissions arise from the demand of the middle class for infrastructure, mobility, buildings and diet. Well-being in cities is reflected in saturation levels of infrastructure with consumption, not production, driving growth as well as high urban per capita emissions. Infrastructure worldwide has used half of total materials, mainly construction, cement and steel, which have no substitute, and will need half of the available carbon space before comparable levels of infrastructure are reached globally around 2050. Peaking of emissions comes some 20-30 years after saturation of infrastructure has been achieved, with related high levels of well-being, as in the case of the West, before net zero emissions are considered. Prime Minister Narendra Modi was justifiably cautious at the Climate Action Summit and avoided commitments to cap emissions. Inequity is built into the climate treaty, which considers total emissions, size, and population, making *India the fourth largest emitter*, even though, according to the United Nations, *the richest 1% of the global population emits more than two times the emissions of the bottom 50%*. Clearly, net zero or carbon neutrality by 2050, and the cap on emissions it implies, applies only to countries with high per capita emissions, GDP and well-being.

Industrialisation and urbanisation are not the problem 'per se'; the problem is the way they were designed in the colonial context: keeping commodity prices low, overly resource-intensive, defining progress as material abundance, and assuming that technology would solve the ecological problem. *By 1950, the contribution of the U.S. to total emissions peaked at 40%. It has declined to approximately 26%, the largest in the world. North America and Europe, with less than one-quarter of the world population, are responsible for almost half of global material use. The share decreased to one-fifth in 2010, when Asia with half the world population used its legitimate share of half of global resource use. But the ecological damage had already been done. China, with four times the population of the U.S., accounts for 12% of cumulative emissions, and India, with a population close to that of China's, for just 3% of cumulative emissions that lead to global warming. Reconstruction in the West after World War II led to acceleration of material use, resulting emissions and sharp rise in global temperature around 1970, before growth commenced in Asia.* Urban transformation requires huge amounts of iron and steel, cement, construction materials and energy for infrastructure. Before infrastructure reaches saturation levels and manufacturing stabilises, material use shapes ways in which countries build houses and transport infrastructure, and how they organise mobility and deliver manufactured goods, food and energy. With the population moving to cities, growth in per capita incomes drives consumption and vehicle emissions becomes the continuing driver of increasing levels of material use, far more significant than manufacturing. In each sustainability benchmark like housing size and density, public bicycle transport and eliminating food waste, India is doing better than the West. *The rising prosperity of the world's poor does not endanger the planet; the challenge is to change wasteful behaviour in the West, and these changes occur at decadal scales.*

Soft power

India must highlight its unique national circumstances. For example, *the meat industry, especially beef, contributes to one-third of global emissions. Indians eat just 4 kg of meat a year compared to those in the European Union who eat about 65 kg and Americans who eat about 100 kg. Also to be noted is the fact that the average American household wastes nearly one-third of its food. Transport emissions account for a quarter of global emissions. They are the fastest-growing emissions worldwide and have surpassed emissions from generation of electricity in the U.S. Transport emissions are the symbol of Western civilisation and are not on the global agenda. Coal accounts for*



a quarter of energy use. It powered colonialism. Rising Asia uses three-quarters as coal drives industry and supports the renewable energy push into cities. India, with abundant reserves and per capita electricity use that is one-tenth that of the U.S., is under pressure to stop using coal, even as it aims to shift to electric vehicles and eliminate oil instead. India has the credibility and legitimacy to push an alternate 2050 goal for countries currently with per capita emissions below the global average — for example, the goal of well-being within ecological limits, the frame of the Sustainable Development Goals, as well as multilateral technological knowledge cooperation around electric vehicles, energy efficiency, building insulation and a less wasteful diet. Emissions are the symptom, not the cause of the problem. India, in the UN Security Council, must push new ideas based on its civilisational and long-standing alternate values for the transition to sustainability.

SESAME, BANANAS, TURMERIC: STUDY FINDS LINK BETWEEN MEDITERRANEAN DIET AND SOUTH ASIA

Bananas are among the most consumed fruits around the globe, but there is now archaeological evidence to suggest they became part of the wider global diet much earlier than once believed. In a study published in the journal Proceedings of the National Academy of Sciences (PNAS) this week, researchers studying the eating habits of people in the southern Levant region during the Bronze and Early Iron Age said they found evidence of foods from South Asia, including bananas, sesame and turmeric, going back to at least the second millennium BCE.

So, why is this significant?

This new finding shows the Levant — the eastern Mediterranean region which includes present-day Syria, Lebanon, Jordan, Israel, Palestine and Turkey — had been trading with South Asia, where bananas, sesame and turmeric were widely cultivated, as early as 3,500-4000 years ago.

It also forces us to rethink our belief that a “global” diet is an essentially modern concept; the archaeological evidence drawn from ancient skeletons suggests that bananas had become popular enough in the region that they were accessible to the common people, and not just royalty, as would have been the case of more exotic foods.

How exactly do we know all this?

The evidence on which the study is based comes from the *dental calculus — tooth tartar or calcified dental plaque — drawn from the teeth of 14 skulls. Dental calculus, which was once discarded, is now considered an invaluable source of insight into the way ancient peoples lived. Dental calculus has been found to trap a lot of evidence, from DNA to food molecules to bacteria, and helps shed light on a number of different things.* For example, an old historical puzzle. The mysterious illness known as coclitzli which contributed to the collapse of the Aztec Empire after the Spanish conquest – was solved thanks to microbiological evidence found in the dental calculus of coclitzli victims. The study, which was published in the journal Nature Ecology and Evolution in 2018, showed that a salmonella outbreak had been responsible for nearly wiping out the population of the region. The PNAS study, similarly, found evidence of imported food items like bananas, soybeans, sesame and turmeric in the dental calculus of the remains examined.



WHERE IS THE GIANT ANTARCTIC ICEBERG A68A HEADING AND WHY IS IT A CAUSE FOR CONCERN?

The giant iceberg A68, the biggest block of free-floating ice from Antarctica with an area of about 5,800 sq. km, has been drifting in the Atlantic Ocean since 2017. This year, due to an ocean current, the iceberg was propelled into the South Atlantic Ocean and since then it has been drifting towards the remote sub-Antarctic island of South Georgia, prompting fears about the impact the iceberg could have on the island's abundant wildlife. Icebergs travel with ocean currents and either get caught up in shallow waters or ground themselves.

What is A68a and where is it headed?

A68a, an iceberg, split off from Antarctica's Larsen C ice shelf in July 2017. Since then it has been drifting towards the remote island of South Georgia, which is a British Overseas Territory (BOT). On its journey, smaller icebergs have calved from the iceberg and right now, the biggest section of the iceberg is called A68a and spans an area of roughly 2,600 sq. km. Last week, the US National Ice Center (USNIC) (USNIC is responsible for naming icebergs, which are named according to the Antarctic quadrant in which they are spotted) confirmed that two new icebergs calved from A68a and were large enough to be named and tracked. They are called A68E and A68F. The fear is that *if the iceberg grounds itself near the island, it could cause disruption to the local wildlife that forages in the ocean.* As per ecologists from the British Antarctic Survey (BAS), which will launch a research mission to study A68a's impact on the ecosystem next month, *if the iceberg gets stuck near the island, it could mean that penguins and seals will have to travel farther in search of food, and for some this might mean that they don't get back in time to prevent their offspring from starving to death. On the other hand, there are some positives of an iceberg being stuck in the open ocean, since icebergs carry dust which fertilises ocean plankton, which draws up carbon dioxide from the atmosphere.*

Why did the iceberg calve?

As per BAS, the iceberg's calving is thought to be a natural event and not a result of climate change. However, some models predict that a warming Antarctica in the future could mean more calving events as ice shelves and glaciers retreat.

WHY DO PEOPLE WANT TO PAY MILLIONS OF DOLLARS FOR DINOSAUR BONES?

In 2020, the year in which auction houses were forced to innovate and replace physical sales with virtual ones, an unusual new record was made. An exhibit at a Christie's auction fetched \$31.8 million — and it wasn't a piece of high-value artwork; rather, the well-preserved skeleton of a dinosaur. The proceeds from the sale of Stan, a nearly 40-foot Tyrannosaurus rex that lived in the late cretaceous period, between 100 million and 66 million years ago, far exceeded the high estimate of \$8 million, and smashed the previous record for a dinosaur fossil at a Sotheby's auction — \$8.4 million in 1997 — several times over. Who wants to buy dinosaur fossils and why, and why are many experts deeply concerned about this trend?

Do dinosaur fossils frequently go under the hammer?

In 2020, a week after the record-breaking auction of Stan the T. rex at Christie's 20th Century Evening Sale in New York on October 6, the Parisian auction house Binoche et Giquello sold a rare



skeleton of a 10-metre-long Allosaurus — a large carnivorous dinosaur that lived in the late Jurassic period, 155 million to 145 million years ago — for €3 million (about \$3.7 million). Earlier in June, a 70 per cent intact 150 million-year-old fossil of a yet unnamed dinosaur, dug up in Wyoming, United States, between 2013 and 2015, was sold to a private collector for \$2.36 million.

How did Stan the T. rex come into the auction circuit?

Discovered in 1987 by an amateur palaeontologist named Stan Sacrison, the fossil, which stands 13 feet high and is 40 feet long, had been at the private Black Hills Institute of Geological Research in Hill City, South Dakota. The skeleton of the dinosaur, which would perhaps have weighed nearly 8 tonnes when it was alive, is considered to be one of the finest specimens of the T. rex, and several of its high-quality casts are in museums the world over. It has been reported that the fossil came into the market as a result of a dispute. In 2015, Neal Larson, a shareholder in the Black Hills Institute, a family-owned business, sued the company after being dismissed, following which a court ruled that Stan had to be sold to pay Larson for his stake in the institute.

Why are palaeontologists concerned about the sale?

Palaeontologists have raised concerns that the commercial sale of dinosaur fossils and escalating prices would encourage people to sell well-preserved fossils in the open market rather than leaving them for palaeontologists to study. *They also fear that most of the good fossils will probably enter private collections, as universities and museums may not be able to match the high prices they offer. Earlier this year, the US-based Society of Vertebrate Palaeontology, a body of palaeontologists, students, artists and advocates committed to the preservation of vertebrate remains, wrote to Christie's, asking them to limit bidders for Stan to public research institutions.*

By what laws are fossil sales governed?

In the US, fossil bones found on federal land are public property, and can be collected only by researchers with permits. These go to public trust and repositories, including accredited museums. Fossils discovered on private land, however, can be bought and sold. In Canada, Mongolia, China, and Argentina, fossils can't be exported, even though cases of black marketing have come to light. *In India, too, palaeontologists fear that the country's rich fossil heritage is under threat in the absence of stringent laws and preservation efforts.*

How popular are dinosaur fossils?

The fact that Christie's auctioned Stan in a sale of contemporary art rather than a natural history auction is being seen as an indicator of the collector base of the fossils. While Hollywood actors, including Nicolas Cage, Russell Crowe and Leonardo DiCaprio, are known to buy dinosaur fossils, there is also a broad collector base in countries such as China, Hong Kong, Taiwan, Thailand, Singapore, Indonesia and the Philippines.

WOOLLY RHINO FROM THE ICE AGE FOUND IN RUSSIA

A well-preserved Ice Age woolly rhino with many of its internal organs still intact has been recovered from permafrost in Russia's extreme north. Russian media reported on Wednesday that *the carcass was revealed by melting permafrost in Yakutia in August.* Scientists are waiting for ice roads in the Arctic region to become passable to deliver it to a lab for studies next month. *It's among the best-preserved specimens of the Ice Age animal found to date. The carcass has most of its soft tissues still*



intact, including part of the intestines, thick hair and a lump of fat. Its horn was found next to it. Recent years have seen major discoveries of mammoths, woolly rhinos, Ice Age foal, and cave lion cubs as the permafrost increasingly melts across vast areas of Siberia because of global warming. Yakutia 24 TV quoted Valery Plotnikov, a paleontologist with the regional branch of the Russian Academy of Sciences, as saying the woolly rhino was likely three- or four-years-old when it died. Plotnikov said the young rhino likely drowned. *Scientists dated the carcass as anywhere from 20,000- to 50,000-years-old. More precise dating will be possible once it is delivered to a lab for radiocarbon studies.* The carcass was found on the bank of the Tirekhtyakh river in the Abyisk district, close to the area where another young woolly rhino was recovered in 2014. Researchers dated that specimen, which they called Sasha, at 34,000 years old.

TRACK SOCIAL MEDIA TO CHECK PANGOLIN POACHING

The Odisha Forest department has stressed the need for stricter monitoring of social media platforms to check pangolin poaching and trading. During past few years, instances of pangolin poaching have been reported at regular intervals from different parts of Odisha. The Athagarh Forest Division in Odisha's Cuttack district had tasted success in pinning down the active gang of pangolin smugglers during November 2019 and subsequently arrested more than 30 members of the organised network from different parts of the State. "Investigations revealed that the accused were trading pangolin and scales online by forming WhatsApp groups in which videos and photos were shared with potential customers, often based outside the country, and details communicated in codes to conceal the transactions," Ms. Lenka said "trafficking of live pangolin and its scales is a highly lucrative business for organised mafia, who exploit poor and vulnerable forest dwelling communities for their criminal interests." She said this was pushing the endangered species into extinction and simultaneously placing these communities at high risk. "While personal contacts and networks of grassroots markets run by middlemen used to facilitate wildlife trade, the cyber revolution has enabled widespread access to digital platforms since the 2000s, and consequently a sizeable chunk of wildlife trade started taking place through social media," said the senior forest officer.

Videos and pictures

Athagarh forest personnel found that it was fairly easy to find videos and pictures of threatened and protected species of animals online. Ms. Lenka blamed chronic field-level manpower shortage for poaching incidents.

WHY DO LEAVES DIE OFF IN AUTUMN?

You might have seen pictures of leaves in cold countries turning yellow and red before falling. This usually marks the beginning of autumn. Known as leaf senescence, this process prepares the trees for the coming winter. *As a result of global warming, European trees were found to start this senescence about two weeks earlier.* In a study published last month in the journal Science, researchers have now demonstrated that trees have a self-regulating mechanism that limits the photosynthesis period or the productive period. *This increased photosynthesis in spring and summer could be leading to earlier senescence.* The analyses suggested that seasonal photosynthesis, autumn temperatures, and day length were the key. Lead author Deborah Zani from the Institute of Integrative Biology, ETH Zurich (Swiss Federal Institute of Technology), Switzerland explained that several other factors, such as atmospheric CO₂ concentrations,



summer temperatures, light levels, and precipitation also appear to influence senescence, but only indirectly through affecting photosynthesis. The team arrived at the conclusion by studying six European deciduous tree species over the last six decades. They found a strong effect of photosynthesis on senescence. *In years with increased photosynthesis in spring and summer, leaf senescence began earlier, with each 10% increase in photosynthetic activity advancing leaf senescence by eight days.*

OVEREXPLOITATION, LONG LIFE CYCLE HAVE ENDANGERED A COMMON HIMALAYAN HERB

The Himalayan trillium (Trillium govatanum), a common herb of the Himalayas was declared 'endangered' by the International Union for Conservation of Nature (IUCN) last week. In recent years, the plant has become one of the most traded commercial plants of the Himalayan region, due to its high medicinal quality. It has been used in traditional medicine to cure diseases like dysentery, wounds, skin boils, inflammation, sepsis, as well as menstrual and sexual disorders. Recent experiments have shown that *the rhizome of the herb is a source of steroidal saponins and can be used as an anti-cancer and anti-aging agent.* This increased its market value and has now become an easy target for poachers. Found in temperate and sub-alpine zones of the Himalayas, at an altitude from 2,400-4,000 metres above sea level, the existence of the plant has been traced across India, Bhutan, Nepal, China, Afghanistan and Pakistan. In India, it is found in four states only- Himachal Pradesh, Jammu and Kashmir, Sikkim, and Uttarakhand. Often called Nagchatri, in local areas this herb grows to a height of 15-20 cm. "There are several factors threatening the survival of the plant such as over-exploitation, long life cycle - slow to reach reproductive maturity - and poor capacity for seed dispersal. The highly specific habitat requirement, high trade value, and increasing market demand are all causing its decline," remarks Anil Kumar Bisht, Professor of Botany, Kumaun University who led the study team. The researchers note that in 2017, the herb was recorded as a medicinal plant traded from India. Since then its price has increased and sold at \$50-315 per kilogram. To prevent its illegal trade, Dr. Chahuhan says, "Implementation and enforcement of sustainable collection protocols and quotas are needed. Designation of areas of natural habitat to local communities for management of harvest is the best option to control its illegal trade. Further, the implantation of FairWild Standard (a set of ecological and fair trade guidelines) can help traders, and concerned agencies in the sustainable harvest and trade of the species." He adds that educational efforts including elevation of public awareness surrounding the threats to the species, and dissemination of best practices for harvest are also needed.

THE SIGNIFICANCE OF THE NEW WHALE SONG RECORDED IN THE INDIAN OCEAN

In a paper published last week in the journal *Endangered Species Research*, authors described a new whale song, suggesting the existence of a population that was previously unknown. *Researchers analysed recordings from three locations in the western Indian Ocean from where they discovered the unique whale song.*

Why do whales sing, and how does it sound?

Not all whales sing. Only some, such as the baleen whale, have been found to sing songs. Whales use songs to communicate and socialise. Their songs can be characterised as clicks, whistles and pulsed calls or a composition of "moans, snores, chirps and cries", as described in *Current Biology*. According to the US National Oceanic and Atmospheric Administration (NOAA), whales use clicks



to navigate and identify their surroundings as the sound bounces off objects, helping whales determine their shapes. Whales use whistles and pulses, on the other hand, during social activities.

Can humans hear whale songs?

As per Current Biology, *whale songs are typically below 4 kHz in frequency (human hearing range is between 20 Hz to 20 kHz). Some blue and fin whale songs are so low in their frequency that parts may be inaudible to human ears.* The journal further says whale songs can last between 6-35 minutes, and some individual whales have been found to sing for 22 hours.

Researchers believe the source is either the blue whale or Bryde's whale since both species have been documented off Oman previously. "Given that this song-type has not been reported before, the presence of it across a large geographic region indicates the likely existence of a previously undefined population of blue whales in the Western Indian Ocean," they noted. "Our observation and initial assessment of this new song-type/acoustic population, and thus potentially a distinct biological population of blue whales in the northwestern Indian Ocean, should lead to dedicated research to better understand it, particularly in light of the conservation implications," they added.

THE INTESTINAL INFECTION IS NOT DEADLY IN MOST CASES

Health officials in Kozhikode district of Kerala convened emergency meetings and kicked in preventive measures last week after six cases of shigella infection and nearly two dozen suspected cases were detected within the urban corporation limits.

What is shigella infection?

Shigellosis, or shigella infection, is a contagious intestinal infection caused by a genus of bacteria known as shigella. The bacteria is one of the prime pathogens responsible for causing diarrhoea, fluctuating between moderate and severe symptoms, especially in children in African and South Asian regions. The bacteria, after entering the body through ingestion, attacks the epithelial lining of the colon resulting in inflammation of the cells and subsequently the destruction of the cells in severe cases. It takes only a small number of shigella bacteria to enter a person's system and get her sick.

What are the common symptoms?

People with shigellosis may start experiencing symptoms within one or two days of the entry of germs in the body. The common symptoms are diarrhoea (often bloody and painful), stomach pain, fever, nausea and vomiting. There have been cases too where people don't experience any signs of the bacterial infection.

How does it spread?

The infection is known to spread person-to-person when the bacteria is swallowed accidentally. This can happen in child-care settings if a person does not wash his hands after cleaning the baby's diaper and then eats food with the same hands. Spread through contaminated food and water is the most common form of transmission across the world.



Is shigella severe in most cases?

No. In most cases, the patient may experience diarrhea lasting for a couple of days and then the symptoms subsiding gradually. If diarrhea persists for more than a week and if the patient suffers from fever and stomach pain, it is advisable to consult a doctor. Complications don't usually occur in most cases. In certain cases, however, if left undiagnosed even after a week of severe symptoms, shigella can cause complications like seizures, rectal prolapse and reactive arthritis, resulting in even death.

How to prevent getting infected by shigella?

According to the CDC, *it's important to wash hands with soap especially after dealing with a child's diaper and before preparing/eating food. While swimming in pools and lakes, it's advisable not to swallow water. One can avoid eating contaminated food especially from the street in unhygienic conditions. Drinking boiled water is advised.*

How serious is the shigella spread in Kozhikode?

Health department officials said the spread of the shigella infection in Kozhikode has been brought under control and there are no reasons for worry. The first suspected case of the infection was a 11-year-old child who was admitted to the Kozhikode Medical College Hospital following severe diarrhea. His condition worsened rapidly and he died last week. Many people who attended the child's funeral and had consumed some form of food or water from his home began to report similar symptoms. When their samples were tested at the lab, shigella was confirmed in six cases. At least 20 others were suspected to have contracted the infection. DMO Dr Jayasree told The Indian Express that except four adults, most of the cases were detected among children. They were promptly admitted to local hospitals for treatment and discharged subsequently. Preliminary reports indicate that contaminated water, served at the child's funeral, could have spread the infection. Samples from the wells in the area have been sent for testing. Most of the cases were restricted to Kottamparambu ward within Kozhikode Corporation limits.

NANOMICELLES: USING NANOPARTICLES FOR CANCER TREATMENT

With the advance in nanotechnology, researchers across the globe have been exploring how to use nanoparticles for efficient drug delivery. Similar to nanoshells and nanovesicles, nanomicelles are extremely small structures and have been noted as an emerging platform in targeted therapy. Nanomicelles are globe-like structures with a hydrophilic outer shell and a hydrophobic interior. This dual property makes them a perfect carrier for delivering drug molecules.

Drug delivery

Now a multi-disciplinary, multi-institutional team has created a nanomicelle that can be used to deliver a drug named docetaxel, which is commonly used to treat various cancers including breast, colon and lung cancer. *"The ideal goal for cancer therapy is destroying the cancer cells without harming healthy cells of the body, and chemotherapeutics approved for treatment of cancer are highly toxic. The currently used docetaxel is a highly hydrophobic drug, and is dissolved in a chemical mixture (polysorbate-80 and alcohol). This aggravates its toxic effects on liver, blood cells, and lungs. So, there was an urgent and unmet need to develop effective drug delivery vehicles for docetaxel without these side effects,"*



Small but active

The nanomicelles are less than 100nm in size and are stable at room temperature. *Once injected intravenously these nanomicelles can easily escape the circulation and enter the solid tumours where the blood vessels are found to be leaky. These leaky blood vessels are absent in the healthy organs. "Chemical conjugation would render the phospholipid-docetaxel prodrug to be silent in the circulation and healthy organs. But once it enters the cancer cells, the enzymes will cleave the bond to activate the drug, and kill the cancer cells,"* adds Dr. Bajaj. The team tested the effectiveness of the nanomicelles in a mice breast tumour model and was found to help in tumour regression. Its toxicity was compared with the currently used FDA approved formulation and found to be less toxic. Similar promising results were seen when tested in higher model organisms including rats, rabbits and rhesus monkeys. The team further studied the mode of action of the nanomicelles and found that they work by enhancing the expression of tumour suppressor genes. *"We are currently working to develop a nanomicelle which can carry multiple drugs and increases the effectiveness of individual drugs.* Previously we developed a hydrogel drug delivery system to carry a combination of three drugs. *These nanomicelles are extremely cost-effective and can prove to be next-generation chemotherapeutic,"* adds Ujjaini Dasgupta from the Amity Institute of Integrative Sciences and Health, Amity University, Gurgaon.

IS THE COVID-19 VACCINE HALAL? INDONESIAIS AWAIT THE ANSWER

The one-sentence letter didn't say much. The coronavirus vaccine was "manufactured free of porcine materials," Sinovac, the Chinese vaccine maker, wrote to Indonesia's state-owned vaccine manufacturer in July. While the letter was promising, Indonesian clerics needed more details. *A vaccine laced with the smallest amount of pork DNA could dissuade some followers of Islam from inoculation in Indonesia, the country with the world's largest Muslim population.* Sinovac took months to provide more information, which came only this week. The Chinese company's delayed response has been yet another challenge in Indonesia's already fragile vaccine rollout. With the highest number of coronavirus infections in Southeast Asia, the country is eager to drum up support for its goal of inoculating 181.5 million adults within 15 months. But *looming questions about the safety of the Sinovac vaccine and whether it is halal, or allowed under Islam, are complicating the government's efforts. "There shouldn't be any concern about whether this vaccine is halal or not halal," President Joko Widodo said. "We are in an emergency situation because of the COVID pandemic."* Indonesia has recorded nearly 800,000 infections and more than 23,000 deaths, staggering numbers in a region where virus cases have remained relatively low. Inoculations are set to begin with health workers, soldiers and police officers in the coming weeks, once health authorities are satisfied that the Sinovac vaccine is safe and effective. Joko said he would go first to show there was nothing to fear. *The vaccine must also undergo a separate approval process by the Ulema Council, an influential group of Muslim clerics that decides which products are halal in Indonesia. Islamic authorities in other countries where Muslims make up a sizable share of the population, including Malaysia and the United Arab Emirates, have already ruled that coronavirus vaccines are permissible, even if they contain pork gelatin, which is used to stabilize many inoculations. Last month, the Vatican released a statement declaring coronavirus vaccines "morally acceptable" for Catholics who might be opposed to a vaccine developed with stem cells from fetuses aborted decades ago.* Indonesians are still waiting for religious leaders to weigh in. The Ulema Council is expected to issue a decree, or fatwa, authorizing the use of the Sinovac vaccine in the coming weeks, but the nature of its findings could affect how widely it is accepted in Indonesia,



especially among the country's many conservative Muslims. During a measles outbreak in 2018, the government, backed by the World Health Organization, undertook an ambitious vaccination program, but the only vaccine available in sufficient quantities contained pig products. *After analysing the measles vaccine, the Ulema Council declared it haram, or forbidden under Islam, but said its use was allowed because the outbreak was an emergency. In some parts of the country, however, local Muslim leaders opposed using a haram vaccine. The program fell well short of its 95% target and ended with nearly 10 million children unvaccinated. Only 72% of the target group was vaccinated.* On billboards above the busy streets of Jakarta, the capital, a woman wearing a face mask and head scarf can be seen flexing her arm as images of the coronavirus float nearby. Thousands of such billboards and banners have been erected along high-traffic roadways across the country. The message: Vaccines protect you. *To encourage widespread vaccinations, some regional governments have also passed new laws allowing for the punishment of people who refuse to get inoculated against the coronavirus.* With a population of 270 million, Indonesia hopes to achieve herd immunity by vaccinating roughly two-thirds of the population in just over a year. Joko said Tuesday that he hoped it could be done even more quickly. Indonesia has ordered vaccines from several companies but plans to rely mostly on Sinovac, which has already delivered 3 million doses. Months ago, China began administering the Sinovac vaccine and one made by a second company, Sinopharm, even though human trials were not completed. Sinovac is expected to release the findings of its late-stage trials soon, with approval by the Chinese government to follow. But *China has rarely been forthcoming about its vaccine data and has a history of producing faulty vaccines and tainted food products. In 2018, a scandal erupted over substandard doses of a vaccine for diphtheria, tetanus and whooping cough, and over fabricated data for a rabies vaccine.* In Indonesia, *a nationwide survey conducted in September by the health ministry, the WHO and UNICEF found that health issues were of even greater concern than whether a coronavirus vaccine was halal.* Dicky Budiman, an Indonesian epidemiologist at Griffith University in Australia, called on China to release scientific data from the inoculations so that Indonesia could evaluate the vaccines' safety and effectiveness. The Ulema Council said it had asked Sinovac repeatedly for documentation on the materials in the vaccine in order to make its determination. It is prepared to announce its ruling after Indonesia determines that the vaccine is safe and effective. *At the Global Halal Center near Jakarta, the council operates laboratories in biotechnology, physics, chemistry and microbiology that it has recently used to test Sinovac's vaccine for pig products. Its labs can test 500,000 product samples a year, said Muti Arintawati, director of the council's Food, Drug and Cosmetics Analysis Agency. The council, founded in 1975 by representatives of major Islamic groups, has the authority to certify whether products and medications meet Islamic standards in Indonesia. Companies pay from \$180 to \$780 for the certification.* Major Islamic groups such as Nahdlatul Ulama and Muhammadiyah, which together have some 140 million members, will join the effort to encourage the vaccine's acceptance once it has been deemed safe and a fatwa has been issued. "We will give an explanation from the Islamic law perspective so that people are willing to be vaccinated," said Ahmad Ishomuddin, Nahdlatul Ulama's supreme leader. "I think only a small number of people will reject it because protecting life is a major purpose of religion."