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## INTERNATIONAL

## HOW WILL PUTIN'S MOBILISATION IMPACT UKRAINE?

**The story so far:**

On September 21, almost seven months after his war in Ukraine began, Russian President Vladimir Putin announced a partial military mobilisation and dialled up the nuclear threat. Separately, four Russia-backed breakaway regions in Ukraine — Donetsk and Luhansk in the east and Kherson and Zaporizhzhya in the south — are holding referendums on joining Russia. These decisions followed Russia's first major battlefield defeat in Ukraine earlier this month with Mr. Putin's troops forced to retreat from the territories they captured in the Kharkiv Oblast by a lightning Ukrainian counter-offensive.

**Why did Putin announce mobilisation?**

When Mr. Putin announced his "special military operation" on February 24, after mobilising over 1,50,000 troops on the border, his plan appeared to be making quick territorial gains in Ukraine through a limited war. Russian troops tried to make a sharp thrust into Ukraine from multiple fronts — in the north, towards Kyiv and Kharkiv; in the east, towards Donbas; and in the south, towards Kherson, Zaporizhzhya and Mykolaiv. The Russians made substantial territorial gains in the east and south — the four regions that are holding referendums make up some 15% of Ukraine's landmass — but they had to pay a heavy price for those gains, which themselves fell short of the original objectives. Ukraine's troops, backed by the North Atlantic Treaty Organization (NATO), stopped the Russians on the outskirts of Kyiv, repelled them from Kharkiv and put up a prolonged resistance in the east. Despite the slow progress, Russia had maintained that its operation was going according to plan — until its troops were pushed back from the Kharkiv Oblast.

The military setback, which strengthened the right-nationalist criticism of the way the war was conducted, forced the Kremlin to come out of the fiction that everything was going as planned. The frontline is now as long as 1,000 km, stretching from the northern edges of the Oskil River to the borders of Mykolaiv in the south, and Russia, which is suffering from supply problems and manpower shortage, finds it difficult to hold the line in the face of Ukrainian counterattacks. Mr. Putin acknowledged the limits of his operation and the challenges his troops face in Ukraine in his address. The reality is that Russia has reached a level where it cannot sustain its military gains without further troop mobilisation. And Mr. Putin has gone for it.

**What is a partial military mobilisation?**

Both Mr. Putin and his Defence Minister, Sergei Shoigu, have said that only those who are currently in the reserves and those who have served in the armed forces and have got military training would be conscripted. Mr. Shoigu says Russia can mobilise some 25 million people from the country's vast reserves but the Defence Ministry is planning to call in only 1% of that potential — some 3,00,000 troops. It may not have been an easy decision for Mr. Putin, who is now in a difficult situation — the Generals need more manpower and hardliners are exerting pressure on him to commit more troops and resources. Some have even expressed rare public criticism such as the Chechen leader Ramzan Kadyrov. On the other side, a general mobilisation, which would need nationwide conscription, could be unpopular. This explains why Mr. Putin delayed the mobilisation so long and hasn't declared war on Ukraine. He can't afford to take further battlefield



defeats either. So he struck a balance by opting for a partial mobilisation — which also triggered some protests — immediately after pro-Russian separatists in Ukraine’s breakaway regions decided to hold referendums on joining Russia. This move itself is a major escalation. The 3,00,000 troops the Russian Defence Ministry is mobilising is almost twice the size of the original mobilisation Russia made before launching this war.

#### **How will referendums impact the situation?**

Of the four regions holding the vote, Russia has recognised Donetsk and Luhansk, which make up the industrial Donbas region, as independent republics. Since the war began, Russia and the separatists have captured almost all of Luhansk and some 65% of Donetsk. They also control parts of Kherson, including the port city that fell in the initial days of the war, and Zaporizhzhya, including the eponymous nuclear plant, Europe’s largest. The separatists have been planning to hold the referendums for some time, but Russia’s setbacks in Kharkiv seem to have quickened their move, with blessings from Moscow. While there won’t be any surprise in the results, what needs to be seen is if and when Moscow recognises the referendums and annexes these territories. If Moscow does it, Ukraine’s borders would be redrawn for good and it would require greater commitment from the Kremlin to defend those territories or capture the rest of these regions that are still controlled by Ukrainians. It’s not a surprise that both the referendums and Mr. Putin’s additional mobilisation were announced simultaneously. They are part of the same strategy.

#### **Is there an exit strategy?**

While Mr. Putin’s declaration of mobilisation is a major escalation, a careful examination of his speech shows mixed signals. Mr. Putin referred to the March talks between Russia and Ukraine where both sides agreed to further discuss peace proposals, which, according to him, was sabotaged by the U.S. and the U.K. Here, the reference is to the Istanbul talks in which Ukraine had made a proposal to adopt neutrality (give up NATO membership plan) in return for multilateral security guarantees, discuss the status of Donbas with Mr. Putin and agree to a 15-year consultation period for Crimea (during which the status quo would be respected). After the talks, Russia announced its withdrawal from around Kyiv and Kharkiv (city). But then, footage of the Bucha bodies emerged, after which the peace process collapsed. While we don’t know the fine print, Mr. Putin’s positive reference to the peace process is an indication that the hope for a negotiated settlement is not yet dead. In the speech he said he would use “all available means” (read nuclear weapons) to protect the territorial integrity of Russia — which was a direct threat to Ukraine against attacking Crimea, which Russia had annexed in 2014. While he backed the referendums, he didn’t say if and when he would recognise the results. This leaves a window of opportunity for the peace process which will not stay open forever.

If Russia, with additional troops, turns around the course of the war, it could strengthen the hands of the Kremlin, which could go for annexation of the territories, shutting the path to peace. If the mobilisation fails, it would make Mr. Putin’s position at home vulnerable, forcing him to take more drastic measures. This means the current phase of the war offers both an opportunity to pursue peace and a slide into dangerous escalation — depending on which path the stakeholders would follow.

### **CUBA GRANTS NOD TO SAME-SEX MARRIAGE IN UNUSUAL REFERENDUM**

Cubans have approved a sweeping “family law” code that would allow same-sex couples to marry and adopt as well as redefining rights for children and grandparents, officials said on Monday,



though opposition in the national referendum was unusually strong on the Communist Party-governed island.

The measure — which contains more than 400 articles — was approved by 66.9% to 33.1%, the president of the National Electoral Council, Alina Balseiro Gutiérrez, told official news media, though returns from a few places remained to be counted.

The reforms had met unusually strong open resistance from the growing evangelical movement in Cuba — and many other Cubans — despite an extensive government campaign in favour of the measure, including thousands of informative meetings across the country and extensive media coverage backing it.

Cuban elections — in which no party other than the Communist is allowed — routinely produce victory margins of more than 90% — as did a referendum on a major constitutional reform in 2019.

The code will allow surrogate pregnancies, broader rights for grandparents in regard to grandchildren, protection of the elderly and measures against gender violence.

President Miguel Díaz-Canel, who has promoted the law acknowledged questions about the measure as he voted on Sunday.

“Most of our people will vote in favour of the code, but it still has issues that our society as a whole does not understand,” he said.

## WHY HAS THE STATE FUNERAL FOR SHINZO ABE DIVIDED JAPAN?

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

The state funeral for former Japanese Prime Minister Shinzo Abe has triggered a public backlash against the government, dealing a major blow to the popularity of Prime Minister Fumio Kishida and the ruling Liberal Democratic Party (LDP). Hundreds of people have hit the streets in Japan to protest the government’s decision to host the funeral with taxpayers’ money. The situation worsened after details emerged about ties between Mr. Abe, the ruling LDP and a controversial religious group, the Unification Church.

### **What is the funeral budget?**

Days after Mr. Abe was gunned down in Nara on July 8, Mr. Kishida announced his decision to host a state funeral. The last fully state-funded funeral took place in 1967 for Prime Minister Shigeru Yoshida. The Cabinet allocated a \$1.8 million budget, which was revised to approximately \$12 million. The high cost fuelled a public backlash as people opposed the taxpayer-funded funeral at a time when many in the country are facing a financial crisis. Others criticised the ruling party for attempting to glorify a political figure considered divisive due to his revisionist views of history and military expansion. An Opposition leader said the decision had no legal bias and was not based on public consensus. Therefore, attempts were made to challenge the decision on legal grounds.

### **What is the link to the Unification Church?**

The Unification Church, also known as the Family Federation for World Peace and Unification, was founded in 1954 by Sun Myung Moon, an anti-communist and self-declared messiah. Since its founding, the church has been embroiled in controversies. Its beliefs are based on the idea that



love in marriage and family is what God wants for world peace and harmony. Known for mass weddings, the group, which critics say is a cult, has hundreds of thousands of followers in Japan. It urges its followers in Japan to make large donations to make amends for their ancestral sins, including the country's past colonisation of the Korean Peninsula, as per experts. The ties between the church and Japan's LDP go back to Mr. Abe's grandfather, Nobusuke Kishi who helped found the church's political unit in Tokyo in 1968.

As the religious body expanded over the years, it provided political support and votes for the governing party. Lawyer Hiro Yamaguchi told Reuters that the church built ties with politicians to attract followers and gain legitimacy while politicians gained access to church members for help with campaigns. While the church said Mr. Abe was neither a member nor an adviser, the former PM had appeared in events organised by church affiliates, including one in 2021.

#### **Why is public anger growing?**

An internal investigation by the LDP found that 179 of 379 lawmakers had ties to the church. The revelation which established links between the LDP with the Unification Church further shifted opinions against the LDP and Mr. Kishida. As per a poll, 62% were against a state funeral. Support for Mr. Kishida also tumbled to its lowest level since he took office, with the approval ratings dropping to 29%. Amid growing public outrage, the PM apologised and pledged to win back trust, saying the LDP will cut ties with the church.

#### **What lies ahead?**

Protests are anticipated on Tuesday as Japan gears up for Mr. Abe's state funeral. Maximum-scale security has been put in place for around 700 foreign guests who are flying in for the event, including Prime Minister Narendra Modi, U.S. Vice President Kamala Harris and Vietnamese President Nguyen Xuan Phuc.

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## NATION

### HOME AND ABROAD

Delivering India's statement at the United Nations General Assembly (UNGA) this year, External Affairs Minister S. Jaishankar spoke of several challenges in India's past, present and future, with a special emphasis on the immediate "shocks" arising from the war in Ukraine, the COVID-19 pandemic, climate change, and terrorism. In stark contrast to the Pakistan Prime Minister Shehbaz Sharif, who made pejorative remarks about India, Mr. Jaishankar made no direct comment on Pakistan. Nor did he directly mention India's challenges at the Line of Actual Control, although he criticised China's habit of politicising and blocking UN Security Council terrorist designations. His comments on Ukraine were watched, as they came days after Prime Minister Narendra Modi was lauded by western countries for telling Russian President Vladimir Putin that the "era of war is over". Mr. Jaishankar expanded on Mr. Modi's theme without seeming to either criticise Russia or condone its actions: instead, he said, India stands on the side of peace, of respect for the UN charter, dialogue and diplomacy, and with all those now grappling with the "escalating costs of food, of fuel and fertilizers". His words were even-handed, and require global stakeholders to consider both the risks from the conflict in Ukraine, and from U.S.-EU led sanctions that could exacerbate global economic fragmentation and inflationary trends. The prognosis seems even bleaker, given that just prior to the UNGA, Mr. Putin delivered a speech committing to Russia's ability to use "all weapons", indicating nuclear options, while the Ukrainian President said no dialogue could bring an end to the war, calling instead for more weaponry and a global effort to "punish" Russia.

Above all, Mr. Jaishankar hailed what he called the "New India" under Mr. Modi, spelling out five pledges made at the 75th Independence day anniversary, which includes making India a developed nation by 2047. He added that India is ready to take on enhanced responsibility at the global body, and called for a reformed UN with an expanded Security Council, as a means at righting the "injustice" done to the global south. The year ahead, where India will host the G-20 summit, will, no doubt, test the will and the ability of the Modi government to play the role of global uniter, and what Mr. Jaishankar called a "bridge" between nations polarised by bitter divides. It is a goal which will only be achievable if New Delhi is able to play a similarly uniting role in its own neighbourhood, and bring polarising and divisive forces within India under control.

### PERMANENT MEMBERSHIP OF THE UNSC IS ANOTHER STORY

There is a buzz in India about the prospects of the country becoming a permanent member of the United Nations Security Council. India's External Affairs Minister has been actively canvassing for the country's candidature, meeting his counterparts from several countries. He has repeated the call, made often in the past, for a text-based negotiation on what has been euphemistically referred to as the reform of the United Nations Security Council (UNSC), i.e., negotiation on a written document outlining the proposed reform instead of just holding forth verbally.

The five permanent members of the UNSC — China, France, the Russian Federation, the United Kingdom and the United States — constitute what is the last, most exclusive club in international relations. All other clubs have been breached. Until a quarter century ago, the nuclear weapon club had five members, the same five as the P-5. India, Pakistan, North Korea and Israel have since joined the club. The P-5 could do nothing to stop the latter countries from forcing themselves into



membership of the nuclear club. But the permanent membership of the Security Council is another story.

### **Declarations that deserve scepticism**

The inescapable fact is that none of the P-5 wants the UNSC's ranks to be increased. One or the other of them might make some noise about supporting one or more of the aspirants. Each is confident that someone among them will torpedo the enlargement of the club. Declarations of support for India's candidature need to be taken with a fistful of salt.

When delegations of 50 countries were drafting the Charter of the future United Nations at Dumbarton Oaks near Washington DC in 1944-45, the article regarding the Security Council, particularly the right of veto, was the subject of maximum debate and controversy. Many countries opposed it. The British representative made it clear: either you have a United Nations with veto or there will be no United Nations. The other participating nations had to lump it. The chief Indian delegate said that it was better to have an imperfect United Nations than not to have one.

### **Intricacies of membership**

There is considerable unhappiness among membership at large in the UN about the right of veto. The debate about veto is most often raked up when the western members of the P-5 club are not able to have their way. It is true that Russia, in its incarnations as the Soviet Union and the Russian Federation, has cast more vetoes (estimated to be 120 times, 'or or close to half of all vetoes') than the three western members of the club. But the western members have used their privileged position any number of times to protect Israel when the Palestinian question was being discussed. They also used veto to prevent sanctions being imposed on the apartheid regime of South Africa. There are no saints there.

India needs to be circumspect about veto. We ought to remember that the Russians have bailed India out on many occasions on the question of Kashmir. Most importantly, Russia helped India by vetoing unfavourable resolutions during the war of Bangladesh liberation in 1971. Looking ahead, we can never rule out the possibility of the Kashmir issue being raised in the Council at some time in the future. While we might expect, though not be certain of, Russia to come to our help, we must rule out either Britain or America from casting a negative vote against Pakistan. Going by the Chinese position of repeatedly blocking India's efforts to include confirmed Pakistani terrorists in the sanctions list, we can be sure of Chinese hostility towards us for a long time.

There are four declared candidates for permanent membership: India, Japan, Brazil and Germany, called the G-4. Africa and Latin America and the Caribbean are unrepresented in the permanent category at present. Africa's claim for two permanent seats has wide understanding and support, but the Africans have yet to decide which two countries these are to be. As for India, we can discount Pakistan's opposition; China will not support India nor will it ever support Japan. Brazil has regional opponents and claimants. As for Germany, Italy is firmly opposed to its claim. Italy has an interesting argument. If Germany and Japan — both Axis powers during the Second World War, and hence 'enemy' states — were to join as permanent members, that would leave out only Italy, the third founding member of the Axis group. In any case there are already three western nations among the P-5. Even if India enjoyed near universal support, there is no way that India alone can be elected; it will have to be a package deal involving countries from other groups.

There is quite a debate going on about whether the aspiring countries should accept permanent membership without the right of veto. There is no ambiguity regarding the position of the P-5.



Every one of them is firmly opposed to conferring the veto power to any prospective new permanent member. Not just the P-5. The vast majority of members do not want any more veto-wielding members in the Council. There is a proposal to the effect that a resolution can be defeated only by a negative vote of at least two permanent members. This also is a non-starter; the P-5 are firmly opposed to any dilution of their privileged position.

Changing the membership of the Council requires amending the Charter. This involves consent of two-thirds of the total membership of the U N, including the concurring votes of P-5. This means that each of the five has a veto. The Charter was amended once in the 1960s to enlarge the Council by additional non-permanent seats.

Even now, if the proposal was to add a few non-permanent seats only, it would be adopted with near unanimity or even by consensus. It is the permanent category that poses the problem. One can have a good idea of the difficulty of amending the Charter by the fact that the 'enemy clause' contained in Article 107 of the Charter remains in it even though some of the enemy states such as Germany, Japan, Italy, etc. are very active members, often serve on the Council, and are close military allies of some of the victors in the war.

#### **A new category is an idea worth considering**

A distinguished group of experts suggested a few years ago that a new category of semi-permanent members should be created. Countries would be elected for a period of eight to 10 years and would be eligible for re-election. India ought to give serious consideration to this idea.

Some experts are of the opinion that India should not accept permanent membership without the right of veto. "We cannot accept second class status", is what they say. First, nobody is offering India permanent membership. Second, membership with veto power should be firmly ruled out. If by some miracle we are offered or manage to obtain permanent membership without veto, we must grab it. Even a permanent membership without veto will be tremendously helpful in protecting our interests. For, there should be no illusion about how states view membership in the Council. It is all about national interest; nobody is there for any worthy cause such as human rights or even war and peace. India will be and should be no different.

#### **U.S. SANCTIONS INDIAN PETROCHEMICAL COMPANY FOR IRAN OIL PURCHASES**

The action against Mumbai-based Tibalaji is first such against an Indian firm; any U.S.-based assets owned by entities against whom sanctions have been imposed will be blocked. In a first such move against oil shipments to India, the U.S. Treasury department announced it had imposed sanctions against a Mumbai-based petrochemical company among several entities accused of selling Iranian petroleum products.

The company, Mumbai-based Tibalaji that was accused of purchasing shipments that were then sent to China, is the first Indian entity to face the U.S. designation under unilateral sanctions passed in 2018-19, after the U.S. Trump administration's decision to walk out of the nuclear deal, or Joint Comprehensive Plan of Action (JCPOA) with Iran. While India has officially refused to endorse the "unilateral sanctions" of the U.S., the Modi government agreed to end all oil imports from Iran in 2019, that made up about 11% of India's intake.

Announcing the move on Thursday, the U.S. Department of the Treasury's Office of Foreign Assets Control (OFAC) said it had sanctioned the "international network of companies" that were involved in the sale of "hundreds of millions of dollars" worth Iranian petrochemical products to

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





South Asia and East Asia. “Today’s action targets Iranian brokers and several front companies in the UAE, Hong Kong, and India that have facilitated financial transfers and shipping of Iranian petroleum and petrochemical products,” the treasury department said, accusing the companies of “concealing the origin” of the shipments.

The U.S. claimed that the Indian company had worked with sanctioned entities like Triliance, a petroleum and petrochemical brokerage firm, as well as Iran Chemical Industries Investment Company and Middle East Kimiya Pars Co., for oil orders which were “ultimately shipped to India”.

Neither the Ministry of External Affairs, nor Tibalaji Petrochemicals responded to requests for a comment on the decision, that came a day after External Affairs Minister S. Jaishankar concluded his visit to the U.S. The Iranian embassy said it had no knowledge of any Indian company that was “registered to deal with such businesses”. However, a diplomat familiar with the issue said, “Iran has never taken permission from the U.S. and accordingly it will adopt any necessary measure to ensure its legal rights and national interests.”

According to the Treasury department, the sanctions against the companies could be reversed if Iran returns to compliance under the JCPOA pact. Iran and International Atomic Energy Agency officials held talks in Vienna this week to discuss the possibility of Iran’s agreement to reallocate inspectors back to Iran for oversight over reactors. The U.S. and Iran have also exchanged their stands via the European Union for a “final draft” on rejoining the JCPOA. “The U.S. is committed to severely restricting Iran’s illicit oil and petrochemical sales,” said Under Secretary of the Treasury for Terrorism and Financial Intelligence Brian E. Nelson, “So long as Iran refuses a mutual return to full implementation of the Joint Comprehensive Plan of Action, the U.S. will continue to enforce its sanctions on the sale of Iranian petroleum and petrochemical products.”

#### SUPREME COURT: STREAMING LIVE

The Supreme Court’s decision to live-stream proceedings — beginning Tuesday — was taken in a full court led by Chief Justice of India UU Lalit last week. It is immensely welcome. The move, which expands on the idea of an open court that is accessible and transparent, marks the onset of a significant transformation in the judiciary’s functioning. Live-streaming directly brings citizens into conversations that have so far largely remained restricted to judges, lawyers and litigants, on vital issues affecting the polity and society. These include cases challenging the constitutionality of job quotas for economically weaker sections, questions related to the political crisis in Maharashtra after the breakaway of a section of Shiv Sena legislators, and about the validity of the All India Bar Examination.

In 2018 a three-judge bench of the Supreme Court allowed live-streaming in cases of constitutional and national importance. Attorney General KK Venugopal, who has for long advocated the idea of regional benches of the Supreme Court to improve access to justice, also batted for live-streaming. Quoting the English legal philosopher Jeremy Bentham, the Supreme Court said that publicity is the very soul of justice. “It is the keenest spur to exertion, and surest of all guards against improbity. It keeps the Judge himself while trying under trial (in the sense that) the security of securities is publicity,” the Court had said. It still took four years, three chief justices and the pandemic to ensure the adequate infrastructure for live-streaming. On the Supreme Court’s cue, at least seven high courts started telecasting proceedings live. In February, the case challenging the state government’s ban on students wearing the hijab before the Karnataka High Court became the first constitutional case to be telecast live. Before that, the cases relating to the management of the Covid crisis before the Gujarat High Court were also keenly watched. Across



the world, live-streaming of judicial processes is an established practice — from the International Court of Justice to the Supreme Courts in other common law countries such as Kenya, Canada, Brazil.

Live-streaming is also an accountability tool for a check on populist statements by lawyers and for ensuring that judges begin proceedings on time and give equal opportunity to all sides. It is also an invaluable resource for those who study and teach law. The archive will be an excellent opportunity to identify and address systemic patterns that are affecting judicial functioning. For example, multiple studies on the US Supreme Court audio archives found a pattern in the disruptions — female judges were more frequently interrupted than their male counterparts. The decision to live-stream proceedings must be the first step towards greater transparency that will enhance public trust in the judiciary's functioning.

## WHAT IS THE SC INITIATIVE ON CAPITAL PUNISHMENT?

### The story so far:

A three-judge Bench of the Supreme Court has referred to a five-member Constitution Bench the issue of giving meaningful opportunity to those found guilty of a capital offence to present mitigating factors and circumstances so that they can better plead for a life term instead of a death sentence. The reference was made to resolve differences between judgments, mainly on whether it is necessary to hold the hearing on sentencing on a subsequent day and not on the day of the conviction. It is believed that an authoritative verdict on the question may lead to the judicial system making death sentences even rarer than it is now.

### What does the law say on sentencing?

The issue arises from the legal requirement that whenever a court records a conviction, it has to hold a separate hearing on the quantum of sentence. Section 235 of the Code of Criminal Procedure (CrPC) says that after hearing arguments, the judge shall give a judgment; and, "if the accused is convicted, the judge shall hear the accused on the question of sentence and then pass sentence". This process gains significance if the conviction is for an offence that entails either death or life imprisonment. Section 354(3) says that when an offence is punishable with death or imprisonment for life, the judgment shall state the reasons for the sentence awarded, and if the sentence is death, "special reasons" for the sentence.

Taken together, these provisions would mean that the sentencing hearing following the conviction of a person for a capital offence is a matter of great importance, as it would decide if the death penalty should be imposed or a life term will be sufficient. This would necessarily entail an inquiry into the nature and gravity of the offence and the circumstances in which it took place. Ever since the Supreme Court, in *Bachan Singh vs State of Punjab* (1980) laid down that the death penalty can be awarded only in the 'rarest of rare cases', the nature of the sentencing hearing has undergone a transformation. Besides the gravity of the crime, the circumstances of the accused also came to be examined to determine the suitability of the death penalty in a given case. Trial courts were required to balance 'aggravating circumstances' and 'mitigating circumstances' to decide the sentence.

### What have courts said about the process?

The Supreme Court noted in *Bachan Singh* that Section 235 is based on a recommendation in the 48th Report of the Law Commission, which had said that one of the deficiencies in sentencing



policy was the lack of comprehensive information about the characteristics and background of the offender.

The Commission had also suggested that gathering evidence related to the circumstances relevant to sentencing should be encouraged. Given this background, the Supreme Court said the trial court, while deciding the sentence, “should not confine its consideration ‘principally’ or merely to the circumstances connected with [a] particular crime, but also give due consideration to the circumstances of the criminal.” In a series of judgments, the Supreme Court has advocated that the sentencing hearing be done separately, that is, at a future date after conviction. “We think as a general rule the trial courts should after recording the conviction adjourn the matter to a future date and call upon both the prosecution as well as the defence to place the relevant material bearing on the question of sentence before it,” it said in a 1989 judgment.

Opinions on this issue have emphasised the need for a separate hearing for sentencing, as well as the need for an effective opportunity to the accused to place mitigating factors before the court. However, in a contradiction of sorts, several judgments have upheld the practice of ‘same-day’ sentencing. Such a practice does not vitiate the sentence, the courts have ruled.

#### **What are the views on same-day sentencing?**

Even though a separate hearing on sentencing is practised in all trials, most judges do not adjourn the case to a future date to go through this. As soon as the verdict of ‘guilty’ is pronounced, they ask counsel on both sides to argue on sentencing. There is a view that such ‘same-day’ sentencing is inadequate and violates natural justice as convicts do not get enough time to gather mitigating factors.

A major premise for the current order of referral is that this process is hopelessly tilted against the accused. “While the State is given an opportunity to present aggravating circumstances against the accused throughout the duration of a trial, the accused, on the other hand, is able to produce evidence showing mitigating circumstances in their favour, which may spare them the noose, only after their conviction,” the Bench said.

#### **What is expected from the reference?**

The Constitution Bench may lay down comprehensive guidelines on the manner in which sentencing decisions can be arrived at. It may make it necessary for the trial court to get to know the accused better before passing the sentence. Going beyond the reports of jail authorities or parole officers, the courts may draft the help of psychologists and behavioural experts. A study into the childhood experiences and upbringing of the accused, mental health history in the family and the likelihood of traumatic past experiences and other social and cultural factors may be mandated to be part of the sentencing process. This may mean that trial courts will be better informed than now, when only basic data such as educational and economic status are ascertained before a sentence is imposed.

### **SUPREME COURT’S ABORTION RULING**

The Supreme Court in a significant judgment on Thursday said it is unconstitutional to distinguish between married and unmarried women for allowing termination of pregnancy on certain exceptional grounds when the foetus is between 20-24 weeks.



The decision follows an interim order in July by which the court had allowed a 25-year-old woman to terminate her pregnancy. The ruling, incidentally delivered on World Safe Abortion Day, emphasises female autonomy in accessing abortion.

#### **What is the court's decision?**

A three-judge Bench comprising Justices D Y Chandrachud, A S Bopanna, and J B Pardiwala framed the interpretation of Rule 3B of the Medical Termination of Pregnancy Rules, 2003, as per which only some categories of women are allowed to seek termination of pregnancy between 20-24 weeks under certain extraordinary circumstances.

The challenge to the provision was made in July by a 25-year-old unmarried woman who moved the court seeking an abortion after the Delhi High Court declined her plea. The woman's case was that she wished to terminate her pregnancy as "her partner had refused to marry her at the last stage".

She also argued that the continuation of the pregnancy would involve a risk of grave and immense injury to her mental health. However, the law allowed such change in circumstances only for "marital" relationships.

The Supreme Court, holding that the law had to be given a purposive interpretation, had allowed the petitioner to terminate her pregnancy in an interim order. However, the larger challenge to the law, which would benefit other women as well, was kept pending.

#### **What does the law on abortion say?**

The Medical Termination of Pregnancy Act allows termination of pregnancy by a medical practitioner in two stages. After a crucial amendment in 2021, for pregnancies up to 20 weeks, termination is allowed under the opinion of one registered medical practitioner. For pregnancies between 20-24 weeks, the Rules attached to the law prescribe certain criteria in terms of who can avail termination. It also requires the opinion of two registered medical practitioners in this case.

For pregnancies within 20 weeks, termination can be allowed if:

- a) the continuance of the pregnancy would involve a risk to the life of the pregnant woman or of grave injury to her physical or mental health; or
- b) there is a substantial risk that if the child was born, it would suffer from any serious physical or mental abnormality.

The explanation to the provision states that termination within 20 weeks is allowed "where any pregnancy occurs as a result of failure of any device or method used by any woman or her partner for the purpose of limiting the number of children or preventing pregnancy, the anguish caused by such pregnancy may be presumed to constitute a grave injury to the mental health of the pregnant woman".

The phrase "any woman or her partner" was also introduced in 2021 in place of the earlier "married woman or her husband". By eliminating the word "married woman or her husband" from the scheme of the MTP Act, the legislature intended to clarify the scope of Section 3 and bring pregnancies which occur outside the institution of marriage within the protective umbrella of the law.





For both stages — within 20 weeks and between 20-24 weeks — termination is allowed “where any pregnancy is alleged by the pregnant woman to have been caused by rape, the anguish caused by the pregnancy shall be presumed to constitute a grave injury to the mental health of the pregnant woman”.

#### **Who falls in the category of women allowed to terminate pregnancy between 20-24 weeks?**

For pregnancies between 20-24 weeks, Section 3B of the Rules under the MTP Act lists seven categories of women:

“(a) survivors of sexual assault or rape or incest; (b) minors; (c) change of marital status during the ongoing pregnancy (widowhood and divorce); (d) women with physical disabilities (major disability as per criteria laid down under the Rights of Persons with Disabilities Act, 2016); (e) mentally ill women including mental retardation; (f) the foetal malformation that has substantial risk of being incompatible with life or if the child is born it may suffer from such physical or mental abnormalities to be seriously handicapped; and (g) women with pregnancy in humanitarian settings or disaster or emergency situations as may be declared by the Government.”

#### **What is the court’s interpretation?**

The court stated that the whole Rule 3B(c) cannot be read in isolation but has to be read together with other sub-clauses under 3B. When other sub-clauses do not distinguish between married or unmarried women, for example survivors of sexual assault, minors, etc., only 3B(c) cannot exclude unmarried women, the court held.

“Rule 3B(c) is based on the broad recognition of the fact that a change in the marital status of a woman often leads to a change in her material circumstances. A change in material circumstance during the ongoing pregnancy may arise when a married woman divorces her husband or when he dies, as recognized by the examples provided in parenthesis in Rule 3B(c). The fact that widowhood and divorce are mentioned in brackets at the tail end of Rule 3B(c) does not hinder our interpretation of the rule because they are illustrative,” the court said.

The court also expanded on Rule 3B(a) — “survivors of sexual assault or rape or incest” — to include married women in its ambit. Although it does not have the effect of striking down the marital rape exception under the Indian Penal Code, the ruling said that even women who have suffered “marital assault” can be included under the provision.

“It is not inconceivable that married women become pregnant as a result of their husbands having “raped” them,” the court said.

#### **What is the effect of the judgment?**

The court’s “purposive interpretation” states that the common thread in Rule 3B is “a change in a woman’s material circumstance”. While the ruling recognises the right of unmarried women, it leaves the enforcement of the right to be decided on a case-to-case basis.

“It is not possible for either the legislature or the courts to list each of the potential events which would qualify as a change of material circumstances. Suffice it to say that each case must be tested against this standard with due regard to the unique facts and circumstances that a pregnant woman finds herself in,” the ruling states.





This means the decision will be in the hands of the registered medical practitioners — and if unsatisfied, the woman can approach the court.

## THE CASE TO DECIDE ON EXCOMMUNICATION WITHIN DAWOODI BOHRAS

The Supreme Court on Tuesday (September 20) said it will examine whether the excommunication of the Dawoodi Bohra community's members can be continued. According to the Bombay Prevention of Excommunication Act, 1949, which first sought to prevent excommunication, the practice was defined as the "expulsion of a person from any community of which he is a member, depriving him of rights and privileges which are legally enforceable by a suit of civil nature". This act was later repealed, and a legal challenge has been posed to the practice.

**The arguments on the petition are likely to begin next month.**

### Who are Dawoodi Bohras?

The Dawoodi Bohras are members of the Muslim community's Shia sect. Their leader is known as the Al-Dai-Al-Mutlaq. For over 400 years, the leader has been based out of India, including the current and the 53rd leader, His Holiness Dr Syedna Mufaddal Saifuddin. According to the members, around 1 million members of the community are spread across the world.

The leader of the community is recognised by the members as having the right to excommunicate its members. In practice, being excommunicated includes not being allowed to access a mosque belonging to the community or a burial dedicated to the community. Among those who have faced excommunication in the past were people who contested the headship of the leaders.

### The Bombay Prevention of Excommunication Act, 1949

The Act was enacted on November 1, 1949, to stop the practice of excommunication prevalent in certain communities, as it led to the deprivation of legitimate rights and privileges of its members and in "keeping with the spirit of changing times and in public interest".

The excommunication of any community member was made invalid, "notwithstanding anything contained in law, custom, usage" for the time being in force. After the act was enacted, one of the members of the Dawoodi Bohra community filed a suit in 1949, saying certain orders passed by their leader were illegal because of the act. Other cases also came before various courts and a petition was filed before the SC by the leader, challenging the constitutionality of the act.

### The legal challenge

The 51st leader of the community, Sardar Syedna Taher Saifuddin Saheb, challenged the constitutional validity of the act in 1962, stating it violated fundamental rights guaranteed in the Constitution under Article 25 (Freedom of conscience and free profession, practice and propagation of religion) and Article 26 (Freedom to manage religious affairs).

It was submitted that the power of excommunication was part of the management of community affairs in matters of religion, and depriving the Dai of the right and making its exercise a penal offence, "struck at the very life of the denomination and rendered it impotent to protect itself against dissidents and schismatics". It was also submitted before the SC that the power to excommunicate is not absolute or arbitrary, and "Save in exceptional circumstances, expulsion from the community can be effected only at a meeting of the Jamat, after the person concerned

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has given due warning of the fault complained of and an opportunity of mending, and after a public statement of the grounds of expulsion. The result of excommunication properly and legally effected involves exclusion from the exercise of religious rights in places under the trusteeship of the Dai-ul-Mustlaq". The practice was claimed to be essential.

Respondents to the petition said that Quran does not permit excommunication and that it went against the spirit of Islam, and the right to regulate religious communities does not include the right to excommunicate. The SC held in 1962 held that the Dai's position is an essential part of the community and the power to excommunicate is to enforce discipline and preserve the denomination, not to punish.

#### The plea now

The court said on Tuesday that it would consider whether the practice protected by the 1962 constitutional bench order can continue. It was submitted that in Maharashtra, the state has enacted the Maharashtra Protection of People from Social Boycott (Prevention, Prohibition and Redressal) Act of 2016, which prohibits the social boycott of a person or a group of persons, and terms it a violation of fundamental rights. The act describes a social boycott as "inhuman" and defines 16 types of social boycott – including preventing members of a community from having access to facilities including community halls, and burial grounds, among others.

### U.P. ISSUES TIMETABLE FOR MADRASAS, DAY TO START WITH NATIONAL ANTHEM

Amid the ongoing survey of madrasas in Uttar Pradesh, the State Madrasa Education Board has issued a new timetable for the aided and recognised madrasas in which educational activities will start with the National Anthem and prayers. The educational work in these madrasas will be held from 9 a.m. till 3 p.m. Previously, the working hours were between 9 a.m. and 2 p.m. Just a few months ago, the board has made it compulsory for teachers and students to recite the National Anthem before the start of the class. "Aided/recognised madrasas timetable is changed to 9 a.m.-3 p.m., in the first sitting, at 9 a.m., prayer [dua] and National Anthem will take place. The teaching will start from 9.20 a.m. till 12 noon. The second sitting will start at 12.30 p.m. till 3 p.m. All aided/recognised madrasas should follow the mentioned timetable," reads the order issued by Jagmohan Singh, Registrar, Uttar Pradesh Madrasa Education Board.

The madrasa system in the State is making headlines since the announcement of the survey — to identify unrecognised ones — which started on September 10 across all 78 districts. Teams formed in the districts have to submit the report to District Magistrates within 25 days who will forward the report to the State government by October 25.

War of words erupted over the survey with the Opposition parties, including the SP and the BSP targeting the government. The Minority Welfare department had argued that the government wanted to check whether basic facilities were being provided to students in madrasas and how they could be brought into the mainstream.

### WHY IS MANIPUR REVISING ITS LIQUOR POLICY?

#### The story so far:

The Manipur Cabinet headed by Chief Minister Nongthombam Biren Singh on September 20 decided to lift the prohibition partially for generating at least ₹600 crore in annual revenue. The decision did not go down well with organisations such as the Coalition Against Drugs and Alcohol

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(CADA) and Meira Paibi, a social movement meaning ‘women torchbearers’, in a State used to the extremist-dictated ban on liquor since 1991.

#### **How did prohibition come about?**

Manipur is geographically and psychologically divided between the Imphal Valley and the hills around it. Valley-based extremist groups, primarily the People’s Liberation Army, hijacked a mass movement against liquor and imposed a total ban. This led to the Manipur People’s Party government headed by R.K. Ranbir Singh enforcing prohibition in the State on April 1, 1991. The sale, brewing and consumption of liquor were subsequently banned for all residents excluding people from the Scheduled Caste and Scheduled Tribe communities who have been brewing it traditionally but not commercially. Total prohibition has been in place in two other north-eastern States flanking Manipur — Nagaland since 1989 and Mizoram, which reimposed total prohibition in 2019 after partially lifting a 1997 ban for four years from 2015. There is no prohibition in the other five States of the northeast.

#### **Did Manipur make a similar bid earlier?**

Biren Singh’s Bharatiya Janata Party-led government is not the first to have pursued partial prohibition since the Manipur Liquor (Prohibition) Act, 1991, came into existence. His predecessor, Okram Ibobi Singh’s Congress-led government amended the Act to lift prohibition in five hill districts — Chandel, Churachandpur, Senapati, Tamenglong and Ukhrul — on July 31, 2002. The Ibobi government sought to remove prohibition from the rest of the State to ensure a “steady source of revenue” to lessen the “dependence on Central largesse”. It also contended that lifting the ban would allow local Manipuri brews such as ‘yu’, two varieties of which came to be associated with Assembly constituencies Andro and Sekmai, to be sold across the country. A wave of protests by civil society groups made Ibobi Singh drop the idea. Biren Singh tried to lift prohibition after coming to power in 2017. His bid to bring in the Manipur Liquor Prohibition (Second Amendment) Bill, 2018, met with stiff resistance from civil society.

#### **What prompted the renewed push?**

Ahead of the Cabinet decision on September 20, Biren Singh recalled his unsuccessful attempt to lift prohibition during his first term as Chief Minister. Announcing the decision, Tribal Affairs and Hills Development Minister Letpao Haokip said the prime driver of the move was to increase the State’s revenue by at least ₹600 crore annually. The State government feels it will also mitigate health hazards caused by the consumption of adulterated liquor. He said prohibition will be lifted from all the district headquarters, including Imphal, tourist destinations, hotels with at least 20-bed lodging facilities and camps of security forces. He insisted that the permit system would be made robust, particularly for liquor transporters. The Cabinet also proposed exploring the possibility of exporting traditionally-brewed liquor. The members of a Cabinet Sub-Committee were sent to Goa a few weeks ago to study the “scientific brewing” of local liquor.

#### **How have the pressure groups reacted?**

While extremist groups, pushed beyond the India-Myanmar border, have taken a backseat in Manipur, pressure groups have reacted strongly to lifting the prohibition and legalising the country liquor business. The focus of organisations such as the CADA is more on the local brews than the possible availability of India-made foreign liquor in stores. The CADA’s contention is that if country liquor is brewed commercially on a large scale for “export”, it could lead to the shortage of some indigenous Manipuri rice varieties and create a famine-like situation. The Meira Paibi, on



the other hand, does not want the government to make liquor flow in a State battling drug abuse. But anti-prohibitionists point out that the ban on liquor has not necessarily made Manipur — like Nagaland and Mizoram — a dry State. Alcoholic beverages of all kinds, most likely adulterated, are available at a premium, they said.

## SLEDGEHAMMER STYLE

There will be little reason for disquiet at the Popular Front of India being termed a radical Islamist organisation that propagates a politics of exclusivism and communalism even if it professes adherence to constitutional values and has, according to its claims, taken part in social and legal activities benefiting Muslims across India. That is because of actions by PFI cadre, in Kerala and coastal Karnataka in particular, resulting in religious and political violence, and vigilantism in the name of religious sentiments being hurt. While the PFI has grown as an organisation since its formation in 2006 — largely due to its assertive actions in the legal and social fronts that have coincided with the rise of Hindutva forces to political hegemony in India, its perceived political and electoral arm, the Social Democratic Party of India has received little support, with minority voters preferring to back secular parties or moderate communitarian forces. The PFI is the Islamic variant of communal politics and the mirror image of the majoritarian current gripping several parts of India. It goes without saying that its activists who have been charged with violence, vigilantism and unlawful acts must be subject to legal scrutiny and brought to justice. But the outright ban on the PFI and its affiliated organisations — barring the SDPI which claims to be independent of it — by the Ministry of Home Affairs (MHA) raises the question whether a sledgehammer approach is the correct course.

The MHA notification, released on September 27, declared the PFI and its affiliates as an “unlawful association” that was “pursuing a secret agenda to radicalise a particular section of society towards undermining democracy”, and the ban for five years followed a series of raids and arrests. This omnibus approach towards banning the PFI and effecting indiscriminate arrests instead of a clear case-to-case judicial process of bringing guilty activists and leaders to book, could only end up strengthening the sense of disquiet at the treatment of minorities in the country and could also further radicalisation among disaffected sections. Deradicalisation is not just a task left to law enforcement agencies; it should be the consequence of reorienting governance to live up to the secular values propounded by the Constitution — something that has taken a beating in recent years. Meanwhile, the organisation has responded to the ban by announcing that it stands disbanded following the notification. The ban must not be utilised as a means to target Muslims, specifically political dissidents and democratic activists who have engaged in legitimate protests against discriminatory pieces of legislation such as the Citizenship (Amendment) Act.

## APPEALING THE PFI BAN: HOW UAPA TRIBUNAL WORKS

The Popular Front of India (PFI), declared an “unlawful association” under the Unlawful Activities Prevention Act (UAPA) by the Centre, will now have the option to present its case before a tribunal that must confirm the government notification for the ban to continue.

### What is a UAPA tribunal?

The UAPA provides for a tribunal under a High Court judge to be constituted by the government for its bans to have long-term legal sanctity.





Orders to declare an organisation as “unlawful” are issued by the Centre under Section 3 of the UAPA. The provision says that “no such notification shall have effect until the tribunal has, by an order made under Section 4, confirmed the declaration made therein and the order is published in the Official Gazette”.

Thus, a government order would not come into effect until the tribunal has confirmed it. However, in exceptional circumstances, the notification can come into effect immediately once the reasons for it are recording in writing. The tribunal can endorse or reject it.

### **The procedure**

According to Section 4 of the UAPA, after the Centre declares an organisation “unlawful”, its notification must reach the tribunal within 30 days to adjudicate “whether or not there is sufficient cause” for the move.

After this, the tribunal calls upon the association, by notice in writing, to show cause within 30 days why it should not be declared unlawful. Once this is done, the tribunal holds an inquiry and decides the matter within six months.

### **Constitution of the tribunal**

The tribunal consists of only one person, who has to be a High Court judge. If a vacancy (other than a temporary absence) occurs in the Tribunal, the Centre appoints another judge and the proceedings continue from the stage at which the vacancy is filled.

The Centre is to provide to the tribunal such staff as necessary for the discharge of its functions. All expenses incurred for a tribunal are borne out of the Consolidated Fund of India.

### **Its powers**

The tribunal has power to regulate its own procedure, including the place at which it holds its sittings. Thus, it can hold hearings in different states for allegations pertaining to those states.

To make inquiries, the tribunal has the same powers as vested in a civil court under the Code of Civil Procedure, 1908. These can be exercised in summoning a witness and examining him on oath; production of any document or other material object producible as evidence; the reception of evidence on affidavits; the requisitioning of any public record from any court or office; and the issuing of any commission for the examination of witnesses.

All proceeding before the Tribunal are deemed to be judicial proceedings.

### **Its record**

Government notifications, with a few exceptions as in the case of SIMI, have largely been confirmed by the tribunals. In case of SIMI, a tribunal had briefly lifted the ban on it in 2008. Almost all extensions of bans too, be it against Zakir Naik, Sikhs for Justice, or the JKLF, have been confirmed.

Proceedings of the tribunal have been criticised for being somewhat opaque. The UAPA permits public non-disclosure of information on bans given the sensitivity involved. It has been said that often, the government gives evidence in sealed cover, leaving no opportunity for an organisation to defend itself.





## MAHARASHTRA'S LOSS IS GUJARAT'S GAIN

A political row has spiralled in Maharashtra with mining conglomerate Vedanta and Taiwan-based electronics giant Foxconn choosing Gujarat over Talegaon to set up their multi-billion dollar semiconductor manufacturing unit. This project aims to make India self-reliant in electronics.

### Blame game

The Eknath Shinde-Devendra Fadnavis government and the Uddhav Thackeray-led faction of the Shiv Sena are blaming each other for the loss of the project, which was estimated to bring about 1,00,000 direct and indirect job opportunities to the State. The signing of the Memorandum of Understanding (MoU) with the Gujarat government has also hurt Marathi pride as Vedanta had nearly finalised Maharashtra as the site for the project.

The claims and counterclaims could hamper the fortunes of the ruling dispensation in the upcoming Brihanmumbai Municipal Corporation elections, while the \$20 billion (₹1.54 lakh crore) project will be a boon to Gujarat, which is scheduled to go to the polls in December.

Leaders of the Shinde faction and the BJP hold the previous Maha Vikas Aghadi (MVA) dispensation responsible for the loss, claiming that it sat on the project offer for seven months. They said that the Shinde-run government approved incentives worth ₹38,831 crore in July. Mr. Shinde accused the MVA government of not cooperating with the companies. "We came to power only one and a half months ago. Such projects don't slip out of hand in one or two months. We held meetings with the companies as soon as we came to power," he said. Soon after Vedanta and Foxconn signed an MoU with the Gujarat government, Mr. Shinde said he spoke with Prime Minister Narendra Modi who assured him that the State will get a "similar project or even a better one". Mr. Shinde wrote a letter to Vedanta inviting the company to sign an MoU on July 29 to set up its plant at Talegaon near Pune, officials claimed.

Deputy Chief Minister Fadnavis sought to portray the issue as "healthy competition". Stating that "Gujarat is no Pakistan, and it is our brother," Mr. Fadnavis said Maharashtra fell behind Gujarat in attracting foreign investment during the MVA's tenure, but will be ahead of everyone in the next two years. He advised the Opposition to focus on becoming "competent and efficient" and not "negative and desperate."

The Opposition accused the BJP of lying, and slammed the government for losing out on the mega project. It alleged that the government came under pressure from Mr. Modi, whose home turf is Gujarat. "Soon after the project moved to Gujarat, the Centre started giving huge incentives, which clearly means the move was already planned. Now, stop criticising us. Let's come together and bring back the project," Mr. Thackeray said. The president of the Maharashtra Pradesh Congress Committee, Nana Patole, called Mr. Shinde a "dummy" Chief Minister and claims that the State was being run by Mr. Modi and Home Minister Amit Shah.

### The BJP's strategy?

What is interesting is that Gujarat was not even in the competition as it doesn't have the required infrastructure. Besides Maharashtra, three other States — Telangana, Tamil Nadu and Karnataka — were competing for the project. These States have an abundance of IT resources and had offered financial and non-financial subsidies on capital expenditure, apart from cheap electricity. This is why officials are wondering why the company decided to set up the mega project in Gujarat instead.



When Vedanta held discussions with Mr. Shinde and Mr. Fadnavis and “almost finalised” the deal, the Maharashtra government was confident about the project. It offered a lucrative 30% capital subsidy for setting up the plant in the Talegaon industrial area, waiver on stamp duty, a power tariff subsidy, and help to set up a 750 MW captive solar power generation unit.

Vedanta and Foxconn are yet to finalise the location for the plant in Gujarat. This might take at least two weeks as they are evaluating various sites based on technical aspects, connectivity and commercial viability. The shift to Gujarat is being seen as an attempt by the BJP to buttress its poll prospects in Gujarat. There has been a trend of projects being delayed or transferred from Maharashtra to other States. Could it be that the BJP’s strategy is to rotate projects with massive investments from one State to another to suit its electoral advantage?

#### AN ATTEMPT TO GET THE INDIAN RAILWAYS BACK ON TRACK

The Indian Railways’ experiment to introduce AC III tier economy class coaches has started to pay off. Since its introduction, in the last one year, these coaches have earned the Railways more than ₹230 crore in revenue by ferrying around 21 lakh passengers. Fares in AC III tier economy are 6%-7% cheaper than the AC III tier class. The economy class has a capacity of 83 berths compared to 72 in the regular coach.

Only 370 such coaches have been used so far, but with demand picking up, the Railways has planned to add more such coaches. Data suggest that adding more AC III tier economy class coaches is a step in the right direction. In recent years, the operating margin of the Indian Railways has taken a beating. Latest data show that the Railways spends ₹98 to earn ₹100. It has consistently failed to meet the expected revenue internally, and its reliance on extra-budgetary resources such as funds from LIC and market borrowings has significantly increased.

OR measures the amount spent by the Railways to earn ₹100. Between FY09 and FY16, OR ranged from 90% to 95%. But between FY17 and FY20, it ranged from 96% to 98%. In other words, the Railways was spending ₹98 to earn ₹100.

The share of internal resources in total revenue receipts fell from 79% in FY15 to 53% in FY20, while reliance on extra budgetary resources to raise funds rose from 5% to 26% during the same period.

The AC III tier is the only class of service which has generated consistent profits for the Railways. Between FY16 and FY20, AC III tier coaches carried only 1% of the total passengers, but were responsible for 21% of the earnings from travellers. Such a low-passenger, high-revenue dichotomy was not seen in any other class. On the other hand, a high-passenger, low-revenue dichotomy was seen in the inexpensive classes. For instance, over 90% passengers travelled by second class which accounted for only 37% of the earnings.

While the first AC and second AC coaches also ferry a smaller share of passengers, their share in earnings was far lower than AC III tier. While the average rate charged per passenger per kilometre in first AC, second AC and executive AC coaches was higher than AC III tier, their share in total earnings was lower. And so, AC III tier stands out. It is not as expensive as the other AC classes and at the same time, its share in revenue has not been impacted by the relatively low pricing.



## EVOLVING CHAIR

The Government on Wednesday announced the appointment of former Eastern Army Commander Lt. Gen. Anil Chauhan, 61, as the next Chief of Defence Staff (CDS), nine months after the untimely death of India's first CDS, Gen. Bipin Rawat in December 2021. He could be in office for almost four years. His appointment is until further orders, or when he turns 65. Lt. Gen. Chauhan will pick up the stalled process of transformation and reorganisation of the armed forces and bring in synergy that was envisaged along with the creation of the post. An ambitious component of the new vision is the proposed reorganisation of the armed forces into integrated theatre commands, which is yet to get the required consensus among military leaders. When the office of the CDS was created in 2019, its mandate was to ensure "jointness" of the three services in operations, logistics, transport, training, support services, communications, repairs and maintenance, within three years of the first CDS assuming office. That ambition was disrupted by the death of Gen. Rawat, and then the delay in the appointment of his successor. Lt. Gen. Chauhan has served a range of command, staff and instrumental appointments including that of Director General of Military Operations, and brings hope and experience.

The nine months and changes in eligibility criteria it took before the appointment could be made point to the fact the CDS is still an evolving institution. The arbitrary changes which expanded the pool of eligible candidates for appointment as CDS may have diminished the dignity of the evolving office. In 2019, the Ministry of Defence was reorganised and a new department of military affairs was carved out with the CDS as its secretary. That did not, however, ensure clarity in terms of functions and roles across the Defence Ministry. The CDS is also the Principal Military Adviser to the Defence Minister and Permanent Chairman, Chiefs of Staff Committee, which requires him to straddle administrative and operational functions. More clarity is needed regarding the functions of the CDS, particularly his relationship with the Service Chiefs in terms of operational roles and administrative duties. While the big focus is likely going to be the theatrisation process, the other tasks before him would be to bring in fiscal prudence and optimisation in utilisation of the defence budget especially given the tough economic outlook. The war in Ukraine has also underscored the need to accelerate the effort to build indigenous capacities in defence manufacturing and resilient logistical chains to be prepared for future wars effectively.

## ISRO EYEING 200TH SUCCESSFUL LAUNCH OF ROHINI RH-200 SOUNDING ROCKET IN A ROW

The 3.5-metre-tall RH-200, a trusted member of the Rohini sounding rocket family used by the ISRO for atmospheric studies, has completed 198 consecutive successful flights, according to the Vikram Sarabhai Space Centre (VSSC), Thumba.

The 199th launch, from Thumba, will happen on October 7 during the World Space Week celebrations. The 200th will take place either towards the end of October or the beginning of November, VSSC Director S. Unnikrishnan Nair told The Hindu on Saturday.

"When RH-200 was first introduced, we were taking our baby steps in rocketry. So there was focus on aspects such as spin-stabilisation and solid motors, in addition to atmospheric studies. Sounding rockets have since been used for a variety of experiments, including those on phenomena related to eclipses," Dr. Unnikrishnan Nair said.

RH-200 is a two-stage rocket capable of climbing to a height of 70 km bearing scientific payloads. The first and second stages of RH-200 are powered by solid motors. The '200' in the name denotes

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the diameter of the rocket in mm. Other operational Rohini variants are RH-300 Mk-II and RH-560 Mk-III.

Sounding rockets have an important place in the ISRO story. The first sounding rocket to be launched from Thumba was the American Nike-Apache — on November 21, 1963. After that, two-stage rockets imported from Russia (M-100) and France (Centaure) were flown. The ISRO launched its own version — Rohini RH-75 — in 1967.

The sounding rocket programme “was indeed the bedrock on which the edifice of launch vehicle technology was built”, the space agency has noted.

Today, these small rockets are launched both from the Thumba Equatorial Rocket Launching Station (TERLS) and the Satish Dhawan Space Centre, Sriharikota.

The ISRO has launched more than 1,600 RH-200 rockets so far. The rocket celebrated its 100th consecutive successful mission on July 15, 2015. Over the years, the rocket has served as a flexible platform for experiments and testing out new technologies. For years, the RH-200 rocket had used a polyvinyl chloride (PVC)-based propellant. The first RH-200 to use a new propellant based on hydroxyl-terminated Polybutadiene (HTPB) was successfully flown from the TERLS in September 2020.

#### CENTRE'S PUSH FOR NAVIC SYSTEM LANDS SMARTPHONE GIANTS ON UNKNOWN ROAD

The Union government is pushing tech giants to make smartphones compatible with its home-grown navigation system within months, worrying the likes of Samsung, Xiaomi and Apple who fear elevated costs and disruptions as the move requires hardware changes, according to two industry sources and government documents seen by Reuters.

In line with Prime Minister Narendra Modi's drive for self-reliance, India has over the years expanded the use of its regional navigation satellite system called NavIC (Navigation with Indian Constellation).

#### Foreign systems

The Union government wants to reduce dependence on foreign systems, including the widely used U.S. Global Positioning System (GPS), and says NavIC provides more accurate domestic navigation and that its use would benefit the economy.

China, the European Union, Japan and Russia have their own global or regional navigation systems to rival GPS. Operational since 2018, NavIC's uptake is minimal; it is mandated in public vehicle location trackers, for example.

But government and industry documents show Mr. Modi's administration and space officials want to broaden its use.

They have this year pushed smartphone giants to make hardware changes to support NavIC, in addition to GPS, in new phones they will sell from January 2023. In private meetings in August and September, representatives of Apple Inc, Xiaomi Corp, Samsung Electronics Co Ltd and others pushed back, citing worries that making phones NavIC-compliant would mean higher research and production costs. The changes would also require more testing clearances, which with a January 1 deadline would disrupt businesses and planned launches, according to two smartphone industry sources and documents.





Samsung declined to comment on the meetings, while Apple and Xiaomi did not respond to requests for comment. The Information Technology Ministry and ISRO also did not respond. Samsung in particular voiced concerns during a September 2 closed-door meeting between top smartphone players and chipmakers with the IT ministry and ISRO officials, according to the meeting's minutes reviewed by Reuters. Samsung's India executive Binu George warned of cost worries, telling officials that NavIC support requires not just new smartphone chipsets but also many other components. "This would add to cost as it requires hardware design changes and additional investments to support devices specific to India," the minutes quoted him as saying. Mr. George did not respond to a request for comment.

## WHY REGISTERING MOBILE PHONES' IMEI NUMBER WITH THE GOVT IS NOW MANDATORY

The Department of Telecommunications (DoT) has made it mandatory for mobile phone manufacturers to register the International Mobile Equipment Identity (IMEI) – the 15-digit numbers that uniquely identify each mobile device – of all handsets made in India with the government. Importers, too, will have to register with the government the IMEI number of each phone before importing it.

### How is the DoT mandating these changes?

In a gazette notification Monday (September 26) amending the prevention of tampering of the Mobile Device Equipment Identification Number, Rules, 2017, the DoT said, "The manufacturer shall register the international mobile equipment identity number of every mobile phone manufactured in India with the Indian Counterfeited Device Restriction portal of the Government of India in the Department of Telecommunications prior to the first sale of the mobile phone".

It added that the IMEI number of mobile phones imported in India for sale, testing, research or "any other purpose" will also have to be registered on the same government portal "prior to the import of the mobile phone into the country".

### What is the IMEI number, and its function?

The IMEI is a unique number that is used to identify a device on a mobile network. It has 15 digits and is like a phone's unique identity. The number is used to verify the identity of a device when a user uses the Internet or places a call through it. Phones with a dual-SIM option have two IMEI numbers, one for each SIM. The IMEI number can help network providers track down a device in case it gets stolen or is lost. Once such loss or theft is reported, the carriers can deny the device access to the cellular network even with a new SIM card.

### Why the increased scrutiny on IMEI numbers?

In a bid to curtail the rampant cloning and theft of mobile phones, the Communications Ministry had earlier rolled out a Central Equipment Identity Register. The identity register categorises mobile phones based on their IMEI status in three lists – white, grey and black. Mobile phones with IMEI numbers on the white list are permitted for use, while those on the blacklist are the ones that are reported stolen or lost and are not be allowed to access the network. Devices with IMEI numbers in the greylist do not conform to standards but are permitted to connect under supervision. The register also allows the DoT to carry out IMEI-based "lawful interception".





In 2017, the government had notified rules to prevent tampering with IMEI numbers of phones by making it a punishable offence which could also attract a jail term. The DoT had announced its plan to implement this project in July 2017 and a pilot was conducted in Maharashtra. “The theft and cloning of mobile phones have become a serious problem. The theft of mobile phones is not just a financial loss but also a threat to personal life of the citizens as well as national security. Counterfeit mobile phones in the market are another issue for DoT. A substantial number of counterfeit mobile phones are active in our mobile networks with fake IMEI numbers,” a DoT office memorandum at the time had stated.

## INDIA INC. NEEDS A NEURODIVERSE WORKPLACE

In the last few years, words such as “inclusion” and “diversity” have assumed importance in the vocabulary of most organisations. A 2019 McKinsey study revealed that companies with gender diversity were 25% more likely to have above-average profitability while those with ethnic diversity out-rival their competitors by 36%. Another report titled ‘India’s Best Workplaces in Diversity, Equity & Inclusion 2021’ states that diverse teams perform better, boost leadership integrity, heighten trust in the organisation’s management and multiply revenue growth. It is no wonder then that organisations are building a more inclusive workforce by hiring employees from different ethnic groups, across gender and social backgrounds. Yet, lacking in this exercise is the absence of workers suffering from neurodiversity.

### What is neurodiversity?

Neurodiversity in the workplace refers to including people with neurodivergent conditions such as attention-deficit/hyperactivity disorder, autism spectrum disorders, dyslexia, dyspraxia, dyscalculia and Asperger’s Syndrome. Harvard Health Publishing defines neurodiversity as a notion that every person interacts and experiences their surroundings differently; there is no right way of thinking, learning, or/and behaving. These differences should not be construed as defects or disorders.

It is, therefore, unjust that even with all the necessary skill sets and degrees, these persons are denied a job because they may react to situations differently from non-neurodiverse persons. While part of the problem could be lack of awareness about neurodivergent conditions, it is time organisations created a more accommodating environment.

According to a recent report, nearly 2 million people in India suffer from this neurological and developmental disorder and are therefore identified as autistic. Another study by Deloitte estimates that nearly 20% of the world is neurodiverse. In the U.S., it is estimated that 85% of people on the autism spectrum are unemployed compared with 4.2% of the overall population. Hence, there is an urgency to create a work environment that welcomes neurodiverse individuals.

### More efficient and creative

Organisations embracing neurodiversity enjoy a competitive edge in several areas such as efficiency, creativity, and culture. A study by JPMorgan Chase shows that professionals in its ‘Autism at Work’ initiative made fewer errors and were 90% to 140% more productive than neurotypical employees. Moreover, studies have shown that teams with both neurodivergent and neurotypical members are far more efficient than teams that comprise neurotypical employees alone. Neurodivergent individuals possess excellent attention to detail and an uncanny ability to focus on complex and repetitive tasks over a more extended period than their neurotypical peers.



A study by the University of Montreal found that in a test involving completing a visual pattern, people on the autism spectrum could finish their task 40% faster than those who were not on the spectrum.

Additionally, people with dyslexia have more robust spatial reasoning — they can think about objects in three dimensions and analyse such objects even with limited information. They have problem-solving capabilities which allow them to see multiple solutions to a problem. They are often out-of-the-box thinkers with average or above-average intelligence.

Companies such as Deloitte, Microsoft, SAP, JPMorgan Chase, and E&Y have introduced neurodiversity hiring programmes. Indian-origin companies Hatti Kaapi and Lemon Tree Hotels have also included a neurodiverse workforce. Human resources and leadership teams must work together to ensure that the workplace is cooperative towards neurodiverse individuals. The process of building an inclusive culture includes customising interviews, ensuring day-to-day assistance for these specially abled individuals, and providing proper infrastructure so that they can perform at their optimal levels. Thus, organisations must not only remove barriers that obstruct the progress of such individuals but also create conducive conditions for them to achieve their true potential.

Mentorship programmes can benefit some, while others might require professional training on shared social and communication skills. Many employees with neurodiversity may find the hustle and bustle of a traditional office disturbing. Therefore, neurodivergent friendly offices catering to the employees' diverse sensory responses can help ensure that these employees are comfortable in office spaces.

However, creating the right environment is an ever-evolving exercise that requires openness and a will to change on the employer's part. This flexibility can result in exceptional benefits with minimal or no additional costs. To ensure higher profitability and be respected as a responsible employer globally, companies need to widen their definition of inclusivity by providing higher participation of a neurodiverse workforce.

## SHIFTING MONSOON PATTERNS

### **What is the monsoon withdrawal?**

The monsoon is a sea-breeze that has consistently landed in the Indian sub-continent for thousands of years. It enters mainland India between the last week of May and the first week of June — though June 1 is its official onset date over Kerala. The IMD only counts the rainfall between June 1 and September 30 as monsoon rainfall. This doesn't mean that the monsoon system ceases to pour rain over India from October 1. In fact, monsoon-related rain can continue well into the first fortnight of October and only really retreats from India by late October. It is then replaced by the retreating, or northeast monsoon in November which is the key source of rainfall for several parts of Tamil Nadu, Andhra Pradesh and north interior Karnataka.

### **When does the monsoon withdraw?**

The monsoon begins its withdrawal from the last State it reaches, which is Rajasthan. Around September 15, cyclonic systems from the Arabian Sea and the Bay of Bengal that fuel the monsoon from June-September are replaced by an 'anti-cyclone' circulation which means dry, windless conditions start to prevail over western and northern India. More technically, withdrawal is a cessation of rainfall activity over northwest India for five straight days, an anticyclone establishing



itself in the lower troposphere and a marked reduction in moisture content. A day after the IMD announced the withdrawal, torrential rains began in several parts of north India.

#### **How has the monsoon been this year?**

Monsoon rainfall in India has been surplus by around 7% this year though with extreme inequity. Central and southern India saw a sharp surge in rainfall. Rains in Central India were surplus by 20% and in southern India by 25%, with the last month seeing several instances of flooding in Kerala, Karnataka and Madhya Pradesh. On the other hand, large parts of U. P., Bihar, Odisha have seen large deficits. The east and northeast of India have reported a 17% shortfall and the northwest 2%. This has impacted sowing of the kharif, or summer crop. Paddy planting has been impacted with sown area 5.51% lower than last year, according to the Agriculture Ministry. The Centre is expecting a minimum of six-million tonne shortfall in rice production and this is likely to elevate inflation.

#### **What led to excessive rains in southern and central India?**

In April, the IMD had forecast 'normal' rains over India but by May-end indicated it to be above normal. Central India and the southern peninsula were expected to get 6% more than their historical average but what we have seen are rains far in excess of this. These heavy rains are premised on a La Nina, the converse phenomenon of the El Nino and characterised by cooler than normal sea surface temperatures in the central Pacific.

While, El Ninos are linked to reduced rains over India, La Ninas indicate surplus rainfall. India is seeing an extended spell of the La Nina, called a 'triple dip' La Nina which is a phenomenon lasting across three winter seasons in the northern hemisphere. This is only the third time since 1950 that a triple dip La Nina has been observed. This, in part, is why for the third year in a row, India is seeing surplus rain in September, a month that usually marks the retreat of the monsoon.

#### **Are monsoon patterns changing?**

Since 2019, monsoon in India has returned surpluses, barring a slight dip last year. The June-September rainfall in 2019 was 10% more than the 88 cm that India usually gets. Though June saw deficit rain, the months of July and August returned extra rain, with September registering 52% more rain than normal. In 2020, India saw 9% more rain with August registering 27% more rain and September 4% more than its usual quota. The rainfall over the country as a whole, in 2021, was 1% less than normal though rainfall in September was a remarkable 35% above what is usual. This year the monsoon is already in surplus by about 6% and a vigorous September is likely to see India post yet another year of surplus rain. Three years of above normal rain in a block of four years is unprecedented in more than a century of IMD's record keeping, data suggests.

### **THE 'TRIPLE DIP' LA NIÑA, AND ITS LIKELY IMPACT IN INDIA**

The ongoing La Niña phase of the equatorial Pacific Ocean has just been predicted to persist for at least another six months, making it one of the longest ever La Niña episodes in recorded history. It is also only the third episode since 1950 to stretch into a third year. This is likely to have wide-ranging implications for weather events across the world in the coming months, and can potentially aggravate both floods and droughts in different regions.



The periodic warming and cooling of surface waters in the equatorial Pacific Ocean — a phenomenon described as El Niño Southern Oscillations, or ENSO — is known to trigger widespread changes in atmospheric conditions, and has a major influence on global weather patterns, including the Indian monsoon. La Niña refers to the ENSO phase in which sea-surface temperatures are cooler than normal. The warmer phase is known as El Niño. A result of interactions between ocean and wind systems, El Niño and La Niña have almost opposite impacts on weather events.

### **‘Triple dip’ La Niña**

El Niño and La Niña episodes typically last for about nine months to a year. They usually develop in the March-June period, and are the strongest during winter (November-January in the northern hemisphere), before weakening or dissipating by March or April of next year.

Occasionally, however, they continue for much longer periods. In recent years, the El Niño of 2015-16, spread over 19 months, was one of the longest on record, and was dubbed ‘Godzilla’ due to its sustained high intensity.

The current La Niña episode has already surpassed that in length. Having started in September 2020, it has prevailed for the last 24 months, and looks set to continue for another six months, and has thus been classified as a ‘triple dip’ La Niña.

However, El Niño and La Niña events are not mirror images of each other. They differ in length and strength.

El Niño episodes occur more frequently and are usually associated with more impactful weather events. La Niña, on the other hand, has a longer run. That is why multi-year La Niña events, those that continue for more than 12 months, are quite common. An El Niño is more likely to be a single-year event.

According to a recent paper published by Chinese researchers, almost half (six out of 13) of all La Niña events since 1950 have stretched for two years, while three, including the current one, have continued for three years. In contrast, over 75% of El Niño events (15 out of 20) ended within a year. No El Niño has ever stretched into a third year.

While prolonged La Niña episodes are not uncommon, the current one differs from the previous two triple-year events in an important aspect. Both the earlier events — one between 1973 and 1976, and the other between 1998 and 2001 — were preceded by a strong El Niño. Prolonged La Niña events in those instances could be explained by the fact that the amount of accumulated heat in the oceans was higher, and therefore took a longer time to dissipate. In the absence of a strong El Niño preceding it, the reason for the current La Niña episode is not very clear at the moment.

### **Evaluating the likely impact**

In the Indian context, La Niña is associated with good rainfall during the monsoon season. This is the opposite of El Niño which is known to suppress monsoon rainfall. Thus, a continued spell of La Niña could lead to expectation of another year of good, or normal, rainfall during the monsoon. Until now, the monsoon season this year has produced 7% more rain compared to normal. Last year, the seasonal rainfall was almost 100%.

But, even though powerful, ENSO condition is only one of the several factors affecting monsoon rainfall in India. There is no one-on-one correlation between the ENSO condition and the amount





of rainfall. Also, the influence of ENSO is at a macro level. There are wide variations in rainfall at the local level, which are getting exacerbated by climate change.

The continuance of La Niña further into 2023 is not bad news from the Indian standpoint. But it is not the same for many other regions where La Niña has very different impacts.

In most parts of the United States, for example, La Niña is associated with very dry winters. In Australia and Indonesia, and generally in the tropical region, La Niña is expected to bring more rainfall.

The widespread drought in the United States and flooding in eastern Australia this year could have been a result of the prolonged La Niña. The excessive rainfall in Pakistan, which is experiencing its worst flooding disaster, can also be blamed in part on La Niña.

In its latest bulletin, the World Meteorological Organisation (WMO) said the worsening drought in the Horn of Africa and southern United States carried the “hallmarks of La Niña”, as did the “above average rainfall in southeast Asia and Australasia”. It said that the persistence of La Niña was most likely to result in a worsening of the drought in Africa.

#### **Climate change link**

“Every unusual weather event these days is attributed to climate change, but science is not conclusive right now (on the linkage of ENSO events with global warming),” J Srinivasan, a distinguished scientist at the Divecha Centre for Climate Change at the Indian Institute of Science in Bengaluru, said.

The occurrences of El Niño or La Niña are not very regular. Sometimes they emerge every two years, at other times there has been a gap of even seven years. Historical records do not go very far in the past. As a result, the natural variability of ENSO is not understood very clearly. And when the natural variability itself is not clear, the influence of global warming is difficult to quantify.

There have been suggestions that climate change is increasing the frequency and intensity of El Niño and La Niña episodes, but the question is not entirely settled. A part of the reason is the fact that trade winds play a very important role in triggering ENSO events. And the changes in the strength of trade winds are not easily explained by global warming.

#### **But there is clearer evidence of another kind of linkage with global warming.**

During La Niña years, the colder surfaces allow the oceans to absorb more heat from the atmosphere. Consequently, the air temperatures tend to go down, producing a cooling effect. However, as pointed out by the WMO, this is not enough to reverse or neutralize the impacts of global warming.

“Its (La Niña’s) cooling influence is temporarily slowing the rise in global temperatures but it will not halt or reverse the long term warming trend,” the WMO statement said.

Incidentally, just a few days ago, the National Oceanic and Atmospheric Administration (NOAA) of the United States declared that the month of August this year was the sixth hottest August in the last 143 years. Average global temperatures were about 0.9 degree Celsius higher than the 20th century average.





The Bay of Bengal (the Bay) is experiencing an increase in geo-economic, geopolitical, and geo-cultural activity. It is poised to once again play a key role in shaping the maritime order in Asia. Therefore, it is noteworthy that at the fourth BIMSTEC summit, Prime Minister Narendra Modi announced the opening of the Centre for Bay of Bengal Studies (CBS) at Nalanda University. The official launch of the CBS has once again demonstrated India's commitment to advancing constructive agendas by forging connections and setting up platforms for all those with an interest in the Bay.

### **Rethinking the Bay**

CBS will offer collaborations in areas such as geo-economics and geopolitics, ecology, trade and connectivity, maritime security, maritime law, cultural heritage, and blue economy to generate opportunities for the Bay region. This will strengthen India's overall framework for maritime engagement, which aims to advance sustainable economic growth for all by fostering closer nautical ties.

The Bay has long been a major commerce hub for the Indian Ocean. It created a conduit between the East and the West in terms for trade and culture. An Indo-Pacific orientation and the realignment of global economic and military power towards Asia have had a considerable impact on the Bay region. The key sea lanes of communication in this area are lifelines for global economic security and are crucial to the energy security that powers the economies of many countries in the region. Further, non-traditional dangers including terrorism and climate change have become more prevalent. The Bay also provides an opportunity for greater regional cooperation in the environmentally friendly exploration of marine and energy resources. The Bay has a biodiverse marine environment. It receives water from some of the world's largest rivers. It is a partially enclosed sea that has given rise to several geological characteristics. It is home to many rare and endangered marine species and mangroves, which are essential to the survival of the ecology and the fishing sector.

## **IN NATURE'S WARNING SIGNS, A NUDGE TO RIPARIAN STATES**

There has been an increase in the magnitude, the frequency and the intensity of floods in many parts of the world. As an example, nearly a third of Pakistan is experiencing devastation, with a spread of diseases and severe shortage of potable water after intense flooding. In June this year Assam experienced one of its worst floods in living memory which affected over 30 districts. In some districts in Assam and Bihar, flooding is a recurrent feature, and thus a major impediment in ensuring poverty alleviation and meeting Millennium Development Goals.

Flooding is still considered to be a natural phenomenon that cannot be entirely prevented. But it is compounded by the lack of transparency in the sharing of hydrological information and also information relating to activities (such as by one riparian state) that are transboundary in their effect (affecting other riparian states), thus serving as an obstacle in understanding the magnitude of flooding.

### **On customary international law**

In accordance with customary international law, no state has to use its territory in a manner that causes harm to another state while using a shared natural resource; this amounts to saying that there is a binding obligation on all states not to release water to cause floods in another co-sharer of the river water. This obligation gives rise to other procedural norms that support the



management of floods, which include notification of planned measures, the exchange of data and information, and also public participation.

The International Court of Justice (ICJ), in the Pulp Mills on the River Uruguay (Argentina vs Uruguay) case (2010), upheld that conducting a transboundary environmental impact assessment (TEIA) of a planned measure or projects on the shared water course is part of customary international law. In fact, the ICJ noted that the acting state must notify the affected party of the results of TEIA to “enable the notified party to participate in the process of ensuring that the assessment is complete, so that it can then consider the plan and its effects with a full knowledge of the facts”.

#### **The Brahmaputra and India’s concerns**

Closer home, there is the case of China being the upper riparian in the Brahmaputra, which spans India and Bangladesh, enjoying apparent leverage vis-à-vis lower riparian India. During the monsoon, flooding has been the recurrent feature in the last several decades in Assam. India faces other woes in the form of the construction of dams by China. China’s excessive water release, as a “dam controller”, in violation of customary international law has the potential to exacerbate flooding in Assam in future. India’s main concern is that there is no comprehensive sub-basin or all basin-level mechanism to deal with water management of Brahmaputra. Neither India or China are party to the United Nations Convention on the Law of the Non-Navigational Uses of International Watercourses (UNWC) 1997 or the United Nations Economic Commission for Europe (UNECE) on the Protection and Use of Transboundary Watercourses and International Lakes 1992 (Water Convention).

The UNWC contains a direct reference to floods, which covers harmful conditions and emergency situations. Article 27 of the Convention says: “Watercourse States shall, individually and, where appropriate, jointly, take all appropriate measures to prevent or mitigate conditions ...that may be harmful to other watercourse States, whether resulting from natural causes or human conduct, such as floods or ice conditions, water-borne diseases, siltation, erosion, salt-water intrusion, drought or desertification.”

In the absence of any mechanism, India relies on its memorandum of understanding (MoU) with China in 2013 with a view to sharing hydrological information during the flood season (June to September). The MoU does not allow India access to urbanisation and deforestation activities on the Chinese side of the river basin. With the MoU in the background, India by becoming a party to either the UNWC and the Water Convention could lay the groundwork for a bilateral treaty on the Brahmaputra but subject to the reservation that it should not insist on the insertion of a dispute settlement mechanism provision.

#### **India, Nepal and flood prevention**

Floods are also a recurrent problem in the Koshi and Gandak river basins that are shared by India and Nepal. The intensity and magnitude of flooding is rising because of heavy seasonal precipitation as well as glacial retreat due to global warming and human-induced stressors such as land use and land cover changes in the river basin area of Nepal (Terai) and Bihar. It is important that the two neighbours view the river basins as single entities, which will help in facilitating an integrated approach for improved basin and flood risk management. The India-Nepal Koshi agreement 1954 (revised in 1966) is aimed at reducing devastating flooding in the river basin. The treaty-based joint bodies have also tried to refine the early warning systems for flood forecasting. In contravention of procedural customary international law obligation, India



considers data on transboundary rivers as classified information, which is one of the key challenges in developing cross-border flood warning systems. In light of the cataclysmic floods in Pakistan and the visible effects of climate change, it is important that all riparian states must comply with all the procedural duties pursuant to the no harm rule. They must also think of becoming a party to either the UNWC or the UNECE Water Convention.

#### WHAT LOWER RAIN IN DELHI THIS YEAR HAS MEANT FOR DRAGONFLIES, DAMSELFLIES

A survey of dragonflies and damselflies at Delhi's biodiversity parks indicates that low rainfall this year may have impacted their life cycles and numbers.

In a week-long survey that concluded on Sunday, a total of 25 species of dragonflies and damselflies were recorded across the biodiversity parks and the Kamla Nehru Ridge.

The Kamla Nehru Ridge recorded the maximum number of species – 25. The Yamuna Biodiversity Park recorded 23 species, a little less than the 25 species recorded in 2018. In terms of the number of individuals recorded, the Kalindi Biodiversity Park recorded the highest number at 3,348, followed by the Aravalli Biodiversity Park where 555 individuals were counted.

The last such survey was conducted in 2018 at the Yamuna, Tilpath Valley and Neela Hauz Biodiversity Parks. The Neela Hauz biodiversity park also recorded a fewer number of species this year – just six – as compared to 2018, when nine species were counted.

Species that were recorded include the Scarlet Skimmer, Picture Wing dragonfly and the Granite Ghost. In addition to counting the number of species in the two main ecosystems of Delhi – the Aravallis and the Yamuna – the survey was also meant to determine whether the deficit in rainfall in Delhi this monsoon has had any impact on dragonflies and damselflies.

Faiyaz Khudsar, scientist in-charge, Biodiversity Parks Programme at the Centre for Environment Management of Degraded Ecosystems, said, "Since the temperature was high and rainfall was low, there was little water in the river and the floodplain wetlands are shrunken. The nymph, which is one of the stages of the life cycle of the dragonfly, stays in the water for a long period of time and is a voracious feeder of mosquito larvae. When the temperature is high and there's less rainfall and less water, the nymph grows quickly into an adult. Since dragonflies have small life spans, they die quickly. That's the scenario this time."

"When the temperature is high and the metamorphosis is faster, the wing size also tends to reduce. And, when the wing size reduces, their dispersal can reduce drastically. Since their movement is reduced, their foraging – they feed on adult mosquitos – is also reduced," Khudsar added.

The city has recorded a deficit in rainfall for the monsoon so far. For the month of September, there was a large deficit in rainfall till this week when monsoonal rainfall picked up again. With rainfall having picked up towards the end of the week, the scientists noticed that the dragonflies began laying eggs again. "They have started breeding again thinking that it is the monsoon. Soon, winter will come, and what's going to happen to those eggs?" Khudsar said.

Collecting data of this sort for a few years can help track the changes taking place in the ecosystem, and it could be too soon now to arrive at concrete conclusions, he added. Dragonflies serve as



biological control for mosquitoes. They are also an indicator of water quality in wetlands and water bodies since polluted water is detrimental to them.

**WAS IT ILLEGAL FOR HIMANTA AND SADHGURU TO ENTER KAZIRANGA AT NIGHT? STRICTLY SPEAKING, NO**

Facing flak for driving inside Kaziranga National Park with Sadhguru Jaggi Vasudev after sunset, Assam Chief Minister Himanta Biswa Sarma on Monday said that night safari in wildlife sanctuaries was in fashion around the world, and that no law in the country, including those for the protection of wildlife, prohibits it.

**Is the chief minister right?**

**He is right, and wrong.**

In India, entry into forests is governed by two laws — The Indian Forest Act, 1927, and The Wildlife Protection Act, 1972. The first applies to all reserve forests and bars trespassing. Everyone other than people who live in villages inside reserve forests, needs permission from the divisional forest officer concerned for entering these forests for any purpose.

The Wildlife Protection Act empowers the Chief Wildlife Warden of a state to frame laws for tourists entering Protected Areas — sanctuaries and national parks. Under the same Act, the National Tiger Conservation Authority (NTCA) has the powers to set rules for tiger reserves. Kaziranga National Park is also a tiger reserve.

While a chief wildlife warden must act “with the previous approval of the State Government” concerned, no rule once set by the warden can be violated by anyone, including superior officers or executives, such as the chief minister. Of course, a chief minister can direct the chief wildlife warden of the state to modify or make certain rules. But any violation of a standing rule will be a violation of — and invite penalty under — The Wildlife Protection Act.

**What is the law currently in Kaziranga?**

Like most national parks and tiger reserves of India, Kaziranga does not allow entry after sunset, barring forest staff. It remains unclear if that rule has been modified, or the chief minister’s entourage was given prior permission by the chief wildlife warden.

In July this year, the NTCA asked Madhya Pradesh to stop night safaris that were started last year in the buffer zones of the Kanha, Bandhavgarh, and Pench tiger reserves on the ground that such activities disturbed the wildlife in the park. The state has requested the NTCA to reconsider, and allow night safaris to continue in the three reserves.

In 2010, the Karnataka High Court allowed the state government to conduct night safari in an area of 50 hectares of Bannerghatta National Park after it was assured that the forest department would take adequate security and safety measures for both wildlife and tourists.

**What is the policy in wildlife parks around the world?**

While the scope for legally permitted night safaris inside sanctuaries and national parks is limited in India, night game drives are routine across Africa in the private concessions of Botswana, South Africa, Tanzania, Kenya, Zimbabwe, Namibia, and Zambia etc.





Night boat safaris to spot caimans — or their eyes reflecting roving spotlights — are popular across the Amazon river system from Peru to Brazil. Closer home, Singapore offers a more curated, if somewhat artificial, experience — Mandai is advertised as the “world’s first nocturnal wildlife park”.

#### **So why are night safaris generally not encouraged in India?**

India does not have private forests where tour promoters can do as they like. But the practical reason why night safaris are not encouraged in the country has to do with the topography.

In the African savanna, lack of vegetation reduces the chances of surprise encounters with wild animals, and tourists generally get a good 360-degree view to put hand spotlights and cameras to good use at night. In India by contrast, most forests present dense tropical vegetation where sighting wildlife is not easy even during the day.

Anyone who has driven along dark roads would know how our pupils adjust to the light ahead of the vehicle, coming from its headlamps. While driving on a forest track overhung by vegetation, this makes spotting animals extremely difficult on both sides of the track even when they are very close. This can cause accidents and put both tourists and animals at risk.

Worse, a wild animal that is momentarily blinded by direct light from an approaching vehicle can react unpredictably. It is one thing to marvel at a hare or two caught in the glare, quite another to negotiate a bigger animal that is either stunned in the middle of a dirt track or is making a blind dash.

Foresters, who travel almost daily through forests at night, say they take extra care to spot animals approaching laterally or to avoid bumping into ones waiting by the wayside. While foresters have a job to do, such risks are not worth taking for tourism revenues, or a few prize photos.

#### **What is the upshot, then?**

While wildlife may not mind the passing of an odd pair of VIP headlamps, people in positions of power bending the rules can often set the stage for new normals. While the government has the powers, allowing night drives is likely to bring in crowds of safari vehicles that one is accustomed to witnessing in the daytime in most of our reserves.

Beyond the balance of safety and rewards, many believe there is little justification for bringing vehicular noise and light in the wilderness after sunset, when most of the wild come into their element.

### **INERT RHINOS RISE FROM ASHES AT KAZIRANGA**

The remains of a stockpile of 2,479 horns burnt in September 2021 were used for building three life-size statues to serve as a memorial to the herbivore and the forest guards that protect it

Three lifeless rhinos have risen from the ashes of the most conspicuous part of the herbivore, at the Kaziranga National Park and Tiger Reserve.

Assam Chief Minister Himanta Biswa Sarma on Saturday unveiled a memorial to the greater one-horned rhino and the forest guards the 1,300 sq. km tiger reserve owes its existence to.



The ash collected from the burning of a stockpile of 2,479 rhino horns, seized from poachers and smugglers and collected from animals that died naturally, was used in the concrete mix to create the life-size rhinos – a 10.5-foot-long and 6-foot-tall male, an 11x5.6 foot female and a 3.5x1.5 foot calf.

The stockpile of horns was also burnt to demonstrate that rhino horns have no medicinal value, he added.

Jatindra Sarma, Kaziranga’s director, said 128.56 kg of ash collected after the burning of the horns a year ago went into making the three rhinos.

The rhino horn ash was not used for the statues of an equal number of forest guards, many of whom have died in the line of duty, some combating poachers.

The memorial named ‘Abode of the Unicorns’, which took six months to complete, is at Mihimukh, the main entrance to the park in Kohora, one of the five ranges of the Eastern Assam Wildlife Division. Kohora is about 200 km east of Guwahati.

#### WHY YOU MAY NOT REACH OUT FOR INSTANT NOODLES AND CHIPS AS THEY WILL NOW COME WITH A HEALTH STAR LABEL

India’s apex food regulator has released a draft notification that will make it mandatory for pre-packaged food items to carry a star rating – just like energy-efficiency ratings on electronic goods – to discourage people from consuming foods high in sugar, salt and fats. The decision to introduce a front-of-pack label of nutrients in pre-packaged foods comes in the backdrop of increasing incidence of non-communicable diseases.

##### **What is a front-of-pack label and why do we need it?**

Any front-of-pack label is supposed to be a graphic or symbol that can provide simplified nutritional information to the consumers, helping them make split-second decisions on which foods to buy. The aim of such labels is to aid consumers make an informed choice, even if they choose to buy high-calorie chips or beverages.

Experts say that such labelling can, in fact, help in reducing the consumption of ultra-processed foods that are high in sugars, salts, and fats. A position paper by organisations such as the Public Health Foundation of India, Centre for Science and Environment and Indian Academy of Paediatrics earlier this year found how Chile witnessed a 24 per cent drop in sugary drink consumption with a warning label.

“Although it is mandatory for food packages to carry the nutrition content, it is printed in a very small font at the back of the pack, with most people not even reading it. A front-of-pack label is less likely to be ignored,” said Dr Jugal Kishore, Head of the Department of Community Medicine at Safdarjung Hospital. Preventing or reducing consumption of foods high in salts, sugars, and fats could help check the increasing burden of non-communicable diseases in the country, with around 60 per cent of all deaths in the country attributable to it.

“Parents will be less likely to give their children Maggie and chips if they see a red warning label on the pack. At present, childhood obesity is a big concern for us as it leads to early onset of lifestyle diseases like diabetes, hypertension and heart attacks. We see people dying at a younger age, in the prime of their lives, because of these diseases in India,” said Dr Suneela Garg, Professor



of Community Medicine at Maulana Azad Medical College and advisor to the FOPL groups at AIIMS and National Academy of Medical Sciences.

#### **What are the different types of front-of-pack labels?**

There are several ways in which the nutritional information can be provided on the front of a pack:

- Daily Intake Guide — A panel that says what proportion of the daily recommendations of nutrients is present in one serving of the pre-packaged food.
- Nutrition Information Panel – A panel that provides the quantity of each of the main nutrients present in the food.
- Traffic Light Labelling – A panel that not only shows the amount of fats, salt, sugar and other nutrients present in a serving of the packaged food but also colours it red, orange or green based on how healthy it is.
- Warning Label – A colour-coded or written label that shows whether the quantity of salts, sugars and fats is high, without providing any details of the quantities in the food.
- Star rating – A label that provides one to five stars based on how healthy the product is, with five being the healthiest. It doesn't provide a break-up of the nutrients.

#### **What has the FSSAI recommended in its draft notification?**

The country's apex food regulator – Food Safety and Standards Authority of India (FSSAI) – has proposed a star rating system called the 'Indian Nutrition Rating (INR)' where the unhealthiest foods will carry a 0 star rating and the healthiest carry a five star rating, according to the recently released draft notification.

As per the draft notification, items will be given scores based on the contribution of energy and content of saturated fats, sugars, sodium, fruits and vegetables (FV), nuts, legumes, and millets (NLM), dietary fibre, and protein in 100 gms of solid or 100 ml liquid foods. Solid foods with a score of more than 25 will be given 0.5 stars while those with a score less than -11 will be given five stars. Liquid foods with a score of more than 20 points are equivalent to 0.5 stars while those scoring zero are equal to five stars, the notification said.

"The INR system rates the overall nutritional profile for packaged food by assigning it a rating from ½ star (least healthy) to five stars (healthiest). More stars indicate that the food product is better positioned to provide for the daily human need of nutrients. The logo shall be displayed close in proximity to the name or brand name of the product on front of pack," the notification read. Along with the star, brands might also choose to display the amounts of various nutrients present. However, it is not mandatory, as per the notification.

#### **What do experts say?**

Several experts have said that a coloured warning label is likely to work the best in countries like India with limited literacy. They say the star rating could be confusing, with people believing even a product with one star could be good because it has a star.

Dr Garg said, "We need a type of label that can immediately tell people that a food is unhealthy even without reading anything. A traffic light for the various components can achieve that. People will try to go for products that have more green labels."



She added, “With a star rating, it does not provide the true picture. What is healthy? Should we consider a 3-star to be healthy? If so, a food with high content of say fruits and vegetables or protein but high sugars will also get an average rating and come across as okay.”

## MAHARASHTRA’S SHIV BHOJAN THALI: WHAT IS THE SCHEME, WHY IS IT UNDER SCANNER AFTER CHANGE OF GOVT?

One of the most popular initiatives of the previous Maha Vikas Aghadi (MVA) government in Maharashtra was the Shiv Bhojan Thali, a form of subsidised meal scheme. With the new Eknath Shinde-led dispensation coming to power in the state, the scheme is under the scanner.

What is the scheme, and what are the allegations of “malpractices” it is facing?

### What is Shiv Bhojan Thali scheme?

The scheme offered a full meal thali (plate) to people for Rs 10. The thali included two chapatis, vegetables, rice, and dal. In urban areas, the cost of the thali came to Rs 50, and in rural areas, the amount was Rs 35. It was sold by canteens for Rs 10, with the government compensating the rest of the amount. Seen as the Uddav Thackeray government’s flagship scheme, the Shiv Bhojan Thali was launched on January 26, 2020, and on average, 1.4 lakh meals were served under it daily.

During the Covid-19 pandemic, the government had initially slashed the prices of the thali to Rs 5. Then from April 2021, the meal was given free of cost, with parcel services allowed too. As the pandemic was brought under control and the lockdown was lifted in phases, the price was brought back to Rs 10 in October 2021.

### What is the controversy over the scheme?

Among the last few decisions of the MVA government was to increase the number of plates being served under this scheme across the state to 2 lakh, from the existing 1,88,463. However, after the new government of Chief Minister Eknath Shinde and deputy Chief Minister Devendra Fadnavis was sworn in on June 30, all decisions taken by the previous dispensation were stayed and underwent scrutiny. The decision to increase the number of thalis was also kept in abeyance.

On Sunday (September 25), state Food and Civil Supplies minister Ravindra Chavan told The Indian Express that a comprehensive review of the implementation of the scheme was necessary. “It is a good scheme. But it needs to be checked whether the intended beneficiaries are actually gaining from it. We will keep a digital watch on every plate being consumed through a mobile application. The scheme will also be reviewed,” he said. Chavan had also said that the observations of the review would be placed in front of the state cabinet, which would decide on the future of the scheme.

### What did the Maharashtra cabinet decide?

Among these “malpractices” is the possibility that canteen operators were exaggerating the number of plates consumed.

In addition, sources said, the government is of the opinion that the scheme is not needed anymore, especially as, according to the central government’s data, over 80 crore individuals are benefiting from the free ration scheme.

### What is the present status of the scheme?

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As per the data from September 27, Maharashtra has a total of 1,699 eateries serving Shiv Bhojan thalis, out of which 1,549 are active. The present number of approved thalis in the state is 1,88,463. The number of actual plates distributed is 1,45,627.

#### Opposition's reaction

The scheme had been executed by the Food and Civil Supplies department led by senior NCP minister Chhagan Bhujbal. Bhujbal has held talks with Fadnavis about the announcement of the review and has opposed the closure of the scheme. The NCP has maintained that it will launch a protest if the government decides to scrap the scheme.

### 1,464 BOOKS, 74 YEARS AND COUNTING: HOW THE WORLD'S LARGEST ENCYCLOPAEDIC SANSKRIT DICTIONARY IS TAKING SHAPE

The current torchbearers of the Encyclopaedic Sanskrit Dictionary project is a team of about 22 faculty and researchers of Sanskrit, who are now working towards publishing the 36th volume of the dictionary, consisting of the first alphabet 'अ'.

After several years, the doors of the scriptorium and the editorial room of the prestigious Encyclopaedic Sanskrit Dictionary at Pune's Deccan College Post-Graduate and Research Institute in Pune were opened for students and the general public. The year of completion of this gigantic dictionary project, which commenced in 1948, remains unknown. But the final word count is estimated to touch 20 lakh and would be the world's largest dictionary of Sanskrit.

#### The Project

Linguist and Sanskrit Professor SM Katre, founder of India's oldest Department of Modern Linguistics in Deccan College, conceived this unique project in 1948 and served as the dictionary's first General Editor. It was later developed by Prof. AM Ghatage. The project is a classic example of painstaking, patient and relentless efforts of the Sanskrit exponents for the last seven decades.

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Between 1948 – 1973, around 40 scholars read through 1,464 books spread across 62 knowledge disciplines – starting from the Rigveda (approximately 1400 B.C.) to Hāsyaṛṇava(1850 A.D.) – in search of words that could be added to this unique dictionary.

### NITISH KUMAR SAYS GOVT LOOKING INTO IAS OFFICER'S CONTROVERSIAL REMARKS; SHE APOLOGISES

Bihar Chief Minister Nitish Kumar said on Thursday that the government was looking into the remarks made by Harjot Kaur Bamhrah, the chairperson and managing director of the state's Women Development Corporation (WDC), who came under criticism for the way she responded to a question by a participant of a workshop on the theme of women's empowerment. Bamhrah, who was also served notice by National Commission for Women (NCW), has tendered a written apology.

In response to a question by a participant of the September 27 workshop, organised by the WDC and UNICEF, on why the government could not arrange for sanitary pads at schools, the IAS officer

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had said: "The question is about whether the government can give sanitary pads. There can also be demands for jeans and good shoes tomorrow, and finally, when it comes to family planning, there can be demand for free contraceptives." When the girl who had asked the question talked about politicians seeking votes, Bamhrah had said: "Don't vote... Become Pakistan."

The state's Social Welfare Minister Madan Sahni told The Indian Express: "Such workshops are organised to encourage, not discourage girls. I was surprised to see that she (Bamhrah) did not seem to know that we have already been giving Rs 300 per month to girl students above Class 6 to buy sanitary pads. We immediately asked her to explain why she said what she said."

The NCW also took cognizance of the remarks and issued a notice to the IAS officer.

The National Commission for Protection of Child Rights has asked the Bihar government to conduct an inquiry and take action.

Bamhrah has tendered an apology. In a three-page written statement, she said: "If some words used by me hurt sentiments of any girl or participants, I express my regret. My objective was not to demean or hurt anyone, but was to encourage them to progress."

#### WHAT ARE THE SURJAPURI AND BAJJIKA DIALECTS, AND WHY IS THE BIHAR GOVT PROMOTING THEM?

Bihar Chief Minister Nitish Kumar and Education Minister Prof Chandra Shekhar have asked the state education department to set up academies for the promotion of the Surjapuri and Bajjika dialects on the lines of the Hindi and Urdu academies. The education department will also set up an umbrella body to monitor the progress of all languages and dialects spoken in Bihar.

##### **What are the Surjapuri and Bajjika dialects and where are they spoken?**

Surjapuri is spoken mainly in Kishanganj and other parts of Seemanchal in northeastern Bihar, including the districts of Katihar, Purnia and Araria. The dialect, a mix of Bangla, Urdu, and Hindi, is also spoken in contiguous parts of West Bengal.

The name Surjapuri comes from Surjapur pargana, which no longer exists. But there is a toll plaza called Surjapur between Purnia and Kishanganj.

Although Surjapuri has nothing specifically to do with religion, the largest share of speakers of the language is made up of Surjapuri Muslims, who live mainly in Kishanganj, the district that has about 70 per cent Muslim population.

About 80 per cent Muslims of Kishanganj are Surjapuri. Prominent leaders of the community include former MP Asrarul Haq Qasmi, the sitting Congress MP from Kishanganj Dr Mohammad Jawed, the head of the Bihar unit of Asaduddin Owaisi's AIMIM, Akhrarul Imam, and the former Union minister Rafiq Ahmad.

Qasmi, the two-term Congress MP from Kishanganj, owed his election victories (in 2009 and 2014) to the overwhelming support he received from the Surjapuri community, and had worked hard for the promotion of the Surjapuri dialect. He passed away in 2018.

Bajjika, one of five dialects spoken in Bihar, is a mix of Hindi and Maithili, and is spoken mainly in Vaishali, Muzaffarpur, and parts of Sitamarhi, Sheohar and Samastipur. Bajjika is not as well known as other dialects such as Bhojpuri and Maithili. Although the Bihar education department



had considered teaching in local dialects up to Class 5 during the second Nitish Kumar government (2010-15), it did not come to fruition.

#### **Why has the Bihar government announced this move at this stage?**

Eight academies or functioning organisations — for Hindi, Urdu, Bhojpuri, Maithili, Angika, Magahi, Bangla, and South Indian languages — already exist in Bihar, and the government's decision on Bajjika and Surjapuri takes note of the two dialects that had been left out.

The idea of setting up an umbrella organisation for Bihar's languages and dialects envisages a platform for academics, litterateurs, and officials to work together to promote literary writing, the upgradation of dictionaries, and the updating of the grammar of these dialects. While Maithili and Bhojpuri have made progress in fields of art, culture, and literature, Magahi, Angika, Bajjika and Surjapuri remain less-developed. The idea is to promote literary writing and conduct more research in Surjapuri and Bajjika as well, so that these dialects could be more popular.

AIMIM Bihar spokesperson Adil Hasan Azad, who belongs to Seemanchal, said: "Surjapuri is the main dialect and even people trading in this region learn it. But there was need to give it a wider platform for greater respectability."

Indeed, while one can immediately recall legends like the poet Vidyapati and the dramatist and writer Bhikhari Thakur for Maithili and Bhojpuri respectively, other Bihar dialects have been struggling in terms of literary growth.

#### **Is there a political reason as well behind the government's move?**

Possibly, yes. Having recently joined hands once again with Lalu Prasad, Nitish Kumar may well be looking at a chunk of votes in the Seemanchal region. Even though Muslims traditionally vote for non-BJP parties, especially the RJD and Congress, the JD(U), which is now part of the Grand Alliance, would like to reach out to voters in Seemanchal. Union Home Minister Amit Shah recently held a rally in Purnia and visited Kishanganj; Nitish would have seen it as important to seek a connect with the Surjapuri community.

Bajjika, which is spoken mainly in parts of North Bihar, may also fit into the political scheme of things for Nitish Kumar. The Bajjika-speaking regions of Sitamarhi, Sheohar, parts of East Champaran, and Vaishali, have been a stronghold of the BJP. While the setting up of a Bajjika academy could be only a symbolic step and an administrative decision, it can only help the Nitish-led Grand Alliance.

### UNESCO LISTS 50 ICONIC INDIAN TEXTILES

UNESCO on Thursday released a list of 50 exclusive and iconic heritage textile crafts of the country. Toda embroidery and Sungadi from Tamil Nadu, Himroo from Hyderabad, and Bandha tie and dye from Sambalpur in Odisha were some of the textiles that made the cut.

Handmade for the 21st Century: Safeguarding Traditional Indian Textile lists the histories and legends behind the textiles, describes the complicated and secret processes behind their making, mentions the causes for their dwindling popularity, and provides strategies for their preservation.

According to UNESCO, one of the major challenges to the safeguarding of Intangible Cultural Heritage in the South Asia is the lack of proper inventory and documentation. The publication, which aims to bridge this gap, brings together years of research on the 50 selected textiles.

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Some of the iconic handcrafted textiles documented from north India are Khes from Panipat, Chamba rumals from Himachal Pradesh, Thigma or wool tie and dye from Ladakh, and Awadh Jamdani from Varanasi.

#### **Finding a place**

From the south, Ilkal and Lambadi or Banjara embroidery from Karnataka, Sikalnayakanpet Kalamkari from Thanjavur have been included.

Kunbi weaves from Goa, Mashru weaves and Patola from Gujarat, Himroo from Maharashtra and Garad-Koirial from West Bengal also find a place among the 50 iconic textiles.

### **ASI FINDS BUDDHIST CAVES, TEMPLES IN BANDHAVGARH TIGER RESERVE IN M.P.**

The Archaeological Survey of India (ASI) on Wednesday (September 28), reported 26 Buddhist caves in Madhya Pradesh's Bandhavgarh Tiger Reserve, after a month-long exploration conducted this summer. Besides the caves, which date back to the 2nd-5th century BCE, other archaeological remains of the Mahayana sect of Buddhism, such as chaitya-shaped doors and cells containing stone beds, were also reported by the ASI team.

#### **The exploration**

The exploration was conducted between May 20 and June 26 this year by the ASI's newly formed Jabalpur Circle, under the direction of its Superintending Archaeologist, Shivakant Bajpai and a dozen team members including archaeologists, archaeological analysts, photographers and forest guards. The team covered nearly 170 sq km within the reserve's core area. "In the exploration, remarkable archaeological remains came to light, adding a new chapter in the history of Baghelkhand," said the ASI. Baghelkhand, which is said to derive its name from the Vaghela Rajput kings of the 14th century, covers the northeastern regions of Madhya Pradesh, and a small area of southeastern Uttar Pradesh.

#### **The findings**

The 26 caves that were found are associated with the Mahayana sect of Buddhism, ASI said, adding that these date back to the same time as the Ajanta caves in Aurangabad, a UNESCO World Heritage Site. Besides the caves, the team also found the remains of 26 temples, two mathas, two stupas, 46 idols and sculptures, 26 fragments and 19 water bodies, according to the report signed by Bajpai. It also mentioned a Buddhist pillar fragment containing a miniature stupa carving, dating to the 2nd-3rd century CE, and 24 Brahmi inscriptions from the 2nd-5th century CE.

The temples are from more recent times — the Kalachuri period (9th-11th century), while the water bodies range between 2nd-15th centuries CE. The report says that the places Kaushami, Mathura, Pavata (Parvata), Vejabharada and Sapatanaairikaa are mentioned in the Brahmini inscriptions, while the inscribed names of kings include Shri Bhimsena, Maharaja Pothasiri and Bhattadeva.

#### **Other explorations at the reserve**

This was the first phase of the current exploration by ASI, which covered the expanse of the Tala Range. In the coming phases, the ASI will survey the remaining ranges of the Bandhavgarh forest, Khitauli and Magadhi. Tala, Khitauli and Magadhi comprise the three main zones of the national park, which together cover an area of 716 km.

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Bandhavgarh was declared a national park in 1968 and became a tiger reserve in 1993. The ASI stated that explorations in the region had been undertaken for the first time since 1938, under the command of ASI archaeologist NP Chakravarty.

### **Competing claims**

It has recently been claimed that the findings of another historian, Professor Nayanjot Lahiri of Ashoka University, predate those of the ASI, and were not acknowledged by the agency.

“The work of Professor Nayanjot Lahiri of Ashoka University precedes the claims of ASI as evidenced in a peer-reviewed publication appeared in Current Science. Prof Lahiri’s findings were communicated in February 2022 and were accepted for publication in June 2022. It was published online on June 20, 2022, and came out in print on September 25, 2022. Prof Lahiri and her students, who worked very hard to discover various archaeological sites in Bandhavgarh, including several caves which have Buddhist footprints, wish that ASI had duly acknowledged their work,” said a statement by the university on Thursday (September 29).

In the article titled ‘Exploring the forest and mapping its archaeology: Bandhavgarh National Park and Tiger Reserve, India’, published in Current Science, Lahiri and co-authors MB Rajani, Debduitta Sanyal and Samayita Banerjee write: The archaeology of historical India has usually been perceived through the lens of cities and states, leaving forest tracts to a large extent unexamined. This article considers the historical signature in a segment of the Bandhavgarh National Park and Tiger Reserve... in order to understand how histories of occupation in jungles and wilderness where no settlements presently exist can be studied.”

They write that their survey — done in four phases, from March 2021 to June 2022 — involved a combination of ground-level investigations using GPS devices along with an analysis of satellite images, and added that “the earliest archaeological markers in Bandhavgarh are cave shelters of the 2nd century”.

Announcing the findings, the Ashoka University website states: “About 81 rock-cut shelters were located by us in an area of 5 kilometres – as the crow flies. Of these, 44 caves bear the numbers of the Forest Department while 37 caves are unnumbered. About 26 caves have inscriptions, with a few of them having more than one epigraph. A few also had carvings in their interiors and occasionally, on the cave exterior... The caves can be dated to the 2nd Century CE as can be gleaned from the inscriptions etched on their walls. These inscriptions, written in Brahmi script, in the Prakrit language, also tell us that they were built as resting spaces for merchants and traders.”

### **The significance of the findings**

Officials in the ASI stated that while the remains were visible to anyone visiting the specific regions of the reserve, the exploration is nonetheless significant because it is the first time that all remains have been officially documented by the agency. They add that while digital documentation and videography has been done, metal signs cannot be placed for visitors as they may be harmful for animals living inside the tiger reserve.

NP Chakravarty, “mainly focussed on exploring and documenting the inscriptions”, the ASI report says, adding, “because of which, not much is known about the architecture of the caves”. While smaller expeditions have been conducted in this region since then, no significant report is available in the public domain, the agency claims.



The new Bajpai report clearly lays out all that has been added to the Chakravarty report — as many as 35 temples have been documented in the reserve, of which 26 were done during the latest expedition. Also, the number of documented caves has increased from 50 to 76, two mathas and two stupas have been reported, another 24 inscriptions have been found (50 in total), the number of reported sculptures have increased to 56 from the previous 10, 20 additional fragments and another 19 water bodies have been found, above the eight previous ones. Additionally, a Votive Stupa has also been reported for the first time, adding a new chapter to Bandhavgarh's history, the ASI said, claiming that the reported temples are also important from an architectural point of view.

#### AXES, SCRAPERS, HANDMADE TILES — LATEST FINDS IN EXCAVATION NEAR CHENNAI

Hand axes, scrapers, cleavers and choppers as old as 12,000 years to rouletted ware (from the Sangam era – 2,000 years ago), Roman amphora sherds and glass beads indicating active trade with Rome were some of the artefacts found by the most recent Archeological Survey of India (ASI) excavation near Chennai. While scholars see it as a crucial chapter in bridging the gap in Tamil history, ASI officials said it was significant as they had discovered some Sangam age artefacts from Natham Medu too, 40 km north west of Chennai city.

K Rajan, a professor at Puducherry Central University, said the most recent discoveries at Natham Medu are significant for the Mesolithic artefacts found. "We previously discovered significant Mesolithic material at Pattinapakkam, a coastal town south of Chennai. Every stone artefact from stone age reveals a culture before it developed into a civilisation. So, these are significant in weaving the history, bridging the history," Rajan said.

M Kalimuthu, supervising archaeologist of ASI in Chennai, said they have started searching for agencies to send discoveries for carbon dating studies, suggesting that Natham Medu was likely a place where stone tools were produced for hunting. The majority of these stone shards were discovered 75 cm below the surface. In the same area, a 10m by 10m pit had artefacts and rouletted ceramics from the Sangam age, Roman amphora sherds, and glass beads shows ongoing trade with Rome from that period. According to Kalimuthu, the sculptures date from the Pallava era (275 CE) to the late Pallavas on the surface (897 CE).

The archeological site at Guruvan Medu, also known as Natham Medu, near Vadakkupattu village, was originally discovered in 1922. There are around 200 potential sites in Tamil Nadu that are used by students and universities for their small-scale excavations. "There were multiple factors, including reports and observations from experts, that made us go deeper into the Guruvan Medu site. The excavation started in July 2022 and we will stop it in a few days only to resume it next year after monsoon," he said.

According to him, the chiselled stone tools indicating the Mesolithic civilization found at a depth of 75 cm were the key findings about a culture. He said they were also surprised to find floor tiles from the area they excavated from the same spot. "They were similar to roof tiles we found from Keeladi. They were handmade, like in Keeladi, but with different features and styles," Kalimuthu said. One of the major archaeological findings from Tamil Nadu in the recent past were in September 2019, indicating that Keeladi, near Madurai, was an urban settlement of Sangam Age on the banks of River Vaigai. The findings, part of a report, had also pushed the history of literacy in south India to at least 2,600 years ago, reducing the gap between the Sangam era or Tamilagam (South India), and the Indus Valley Civilisation (1,500 BCE). Earlier, it was the 3rd century BCE.



The state Archaeology Department is now investigating the digs at Mayiladumparai and Keeladi near Madurai, where evidence established the origins of the Tamil Brahmi scripts as 600 BCE, rather than around 300 BCE as previously thought — a critical discovery that narrowed the gap between the Indus Valley Civilization and Tamilagam/South India's Sangam Age. While Keeladi's findings proved that there were "large scale brick structures and associated artefacts of high economic value" 2600 years ago, Kalimuthu said radiocarbon dating and a scientific analysis would be bridging more gaps with regard to Natham Medu findings too citing Keeladi model roof tiles they have found in two-month excavation.

## PLAYTIME

In an initiative to use the power of sports to reach out to people of a poll-bound State, the Gujarat government volunteered to host the 36th National Games across six cities — Ahmedabad, Gandhinagar, Vadodara, Surat, Bhavnagar and Rajkot — in a short time. The fact that other States took years to prepare and the Goa edition was cancelled after several postponements revealed the enormous challenge that Gujarat had to deal with in organising this large-scale event. Odisha had set a new benchmark by organising the 2017 Asian Athletics Championships in three months and Gujarat equalled the feat by staging a multi-sport event in a similar time frame. With the same party — the Bharatiya Janata Party — ruling in the State and the Centre, the cooperation was smooth in the run-up to the event, which was last held in Kerala seven years ago. The Narendra Modi Stadium — the biggest cricket venue seating over a lakh — staged the Games' spectacular opening ceremony at Ahmedabad. A show of light and sound, it showcased Gujarat's rich cultural heritage and blended with it the country's technological advancement. It was reflected in the use of eye-catching augmented reality technology by Doordarshan during the live coverage of the inaugural extravaganza.

For the Games, involving 8,000-plus athletes from 36 teams in 35 sporting categories, Gujarat used its existing infrastructure instead of building new venues that often turn out to be white elephants. It converted some international standard expo centres into indoor sports facilities. Instead of building a Games Village, it used hotels to provide accommodation to the athletes and ensured business to the State's hotel industry. The Games, which began as the Indian Olympic Games in Lahore in 1924 before being rechristened as the National Games after Independence, stays relevant in its 98th year by providing young athletes an opportunity to get a feel of a multi-discipline Games and compete with world-class athletes such as Mirabai Chanu, Shiva Thapa and Avinash Sable before they step on to the international platform. For Gujarat, organising the Games was in sync with the State's ambition to host the Olympics in future. The efforts to set up the Swarnim Gujarat Sports University in Vadodara, encouraging the use of technology in sports and promoting skill development through sports are steps in this direction. Inaugurating the 2022 Gujarat edition, Prime Minister Narendra Modi declared his Government's intention to use the soft power of sports for the country's overall development while for the athletes, the National Games offers a stepping stone to greater progress.

## WHEN ARE THE NEW ICC RULES COMING INTO PLAY?

### The story so far:

The International Cricket Council (ICC) has come up with a host of changes in the rules on playing conditions of cricket. The changes will come into effect on October 1. The men's T20 World Cup,

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to be held in Australia from October 16 to November 13, will be played in accordance with the new rules. The ICC Chief Executives' Committee has ratified the recommendations from the Men's Cricket Committee, led by former Indian captain Sourav Ganguly. The changes were approved by the Women's Cricket Committee too.

#### **What are the significant changes?**

The practice known as 'mankading'— a batter being run out by the bowler while backing up too far from the non-striking end — has been destigmatised. It has been moved from the section on Unfair Play to the one on Run Out. 'Mankading' became a topic of discussion after R. Ashwin ran Jos Buttler out in such a manner during an IPL match at Jaipur three years ago. It has been considered against the spirit of cricket, a game which has traditionally valued ethics highly, sometimes at the cost of losing a considerable advantage or even a match. West Indies fast bowler Courtney Walsh had famously refused to run Pakistan's Saleem Jaffar out by 'mankading' in a match at the 1987 World Cup in Lahore. The host had needed two off the last ball when Walsh stopped and warned Jaffar. 'Mankading' is once again dividing opinions after India's Deepti Sharma ran England's Charlie Dean out in the third Womens One Day Internationals (ODI) at Lord's on Saturday.

Other changes include the banning of the use of saliva to polish the ball. The ban had already been in place, as a temporary measure, following the COVID-19 outbreak. Additionally, some part of the batter or the bat has to remain within pitch. If the batter goes beyond the pitch, the umpire could call it a dead ball. Conversely, if a ball forces the batter to leave the pitch, it will be a no-ball.

Also from now on the new batter, coming in at the fall of a wicket, should be ready to face the music from ball one: it doesn't matter if the batters have swapped ends before the catch is taken. Earlier, if the batters had crossed, the new batter would have walked up to the non-striking end. In precarious situations, the previous rule would have made life a little easier, especially for a tail-end batter. The new batter will also have a little less time to reach the middle. The time to take strike has been reduced, for Tests and ODIs, to two minutes, from three. The 90-second deadline stands for T20 Internationals, though. A penalty of five runs will be awarded to the batting side for an unfair and deliberate movement while the bowler is running in to bowl. Besides, that ball will be called a 'dead ball'. The ball can now also be deemed dead when a bowler attempts to run down the striking batter who comes down the wicket before the former enters the delivery stride.

#### **What about the use of hybrid pitches?**

The hybrid pitches could now be used for ODIs and T20Is, for men and women if both the rival teams agree. At present it is used only in women's matches. The hybrid pitches are made of natural grass (predominantly) and artificial fibre.

#### **What about penalising a team for poor over-rate?**

The penalty already in force in T20Is since January this year will be adopted in the ODIs as well, but only after the completion of the ICC Cricket World Cup Super League (2020-2023), which is part of the qualification process of the 2023 World Cup (ODI). If a team fails to bowl its overs in the given time, an additional fielder will have to be placed inside the 30-yard circle, for the remaining overs. That could make saving runs tougher for the fielding side.





## BUSINESS & ECONOMICS

### THREE MORE MONTHS OF FREE FOODGRAINS FOR POOR: ECONOMICS & POLITICS OF PM-GKAY

The government on Wednesday (September 28) announced an extension of the Pradhan Mantri Garib Kalyan Anna Yojana (PM-GKAY) for another three months until December 2022. The decision was taken in the meeting of the Union Cabinet chaired by Prime Minister Narendra Modi.

Union Minister for Information and Broadcasting Anurag Thakur told reporters that the Cabinet had approved the seventh phase of PM-GKAY for three months (October-December 2022).

Thakur said that a total of Rs 3.45 lakh crore had been spent on the six phases of PM-GKAY so far, and another Rs 44,762 crore will be spent on the seventh phase. A total 122 lakh metric tonnes of foodgrains will be distributed to over 80 crore beneficiaries across the country, he said.

#### **What is the PM-GKAY?**

The PM-GKAY is a scheme under which the government provides free foodgrains — 5 kg per person per month — to eligible beneficiaries of the National Food Security Act (NFSA), 2013. This is over and above their monthly entitlement under the NFSA.

The scheme was started as one of the components of the government's Rs 1.7 lakh crore Covid relief package announced by Finance Minister Nirmala Sitharaman on March 26, 2020 — two days after the country went into national lockdown following the outbreak.

#### **How did the scheme keep getting extended?**

Initially, the scheme was only for three months — April to June 2020. However, on July 8, 2020, it was extended for another five months from July to November 2020. After the devastating second wave of the Covid-19 hit the country in March-April 2021, the government restarted the PM-GKAY. The third phase of the scheme was approved for two months — May and June 2021.

Subsequently, the government extended the scheme for another five months — from July to November 2021. This fourth phase of PM-GKAY was supposed to end in November in view of the ebbing of the second wave of Covid-19, but on November 24, 2021, the government decided to continue it till the end of March 2022. The decision to extend the scheme into a fifth phase was widely seen as a response to the Assembly elections in key states such as Uttar Pradesh and Punjab.

After the elections ended, however, the government announced another extension — on March 26 this year, the Union Cabinet chaired by Modi approved the sixth phase of PM-GKAY, until September.

#### **How much grain has been disbursed so far?**

In the six phases of the scheme from its inception in early 2020 up to July 2022, the government has allocated 998 lakh metric tonnes (LMT) of foodgrains — including 635.1 LMT of rice and 362.86 LMT of wheat — of which 826 LMT has been lifted by states and Union Territories.

It is estimated that the government has spent around Rs 3.4 lakh crore on the implementation of all six phases of the PM-GKAY.



“The Government has spent approximately Rs. 2.60 Lakh Crore so far and another Rs. 80,000 Crore will be spent over the next 6 months till September 2022, taking the total expenditure under PM-GKAY to nearly Rs. 3.40 Lakh Crore,” an official statement issued after the Cabinet meeting of March 26 said.

#### **What are NFSA beneficiaries entitled to?**

There are two categories of beneficiary households under the NFSA — the Antyodaya Anna Yojana (AAY) households, and the Priority Households (PHs). Each AAY household is entitled to 35 kg of foodgrains every month irrespective of the number of members in the household. PHs are entitled to receive foodgrains according to the number of family members. Each member of a PH is entitled to receive 5 kg of foodgrains every month under the NFSA. So, the bigger a PH family, the greater is the quantity of foodgrains it gets.

#### **At what rate are foodgrains provided under the NFSA?**

NFSA beneficiaries are entitled to receive foodgrains at highly subsidised rates. Under the food law, rice is provided at Rs 3 per kg, wheat at Rs 2 per kg, and coarse grains at Re 1 per kg.

#### **How many persons are covered under the NFSA?**

The NFSA, enacted by the UPA government in 2013, aims at ensuring “access to adequate quantity of quality food at affordable prices” to 50 per cent of the urban and 75 per cent of the rural population of the country. The overall national coverage of the NFSA is about 67.5 per cent.

Section 9 of the NFSA states that the number of persons to be covered in rural and urban areas of a state shall be calculated on the basis of population estimates as per the Census of which the relevant figures have been published.

The latest published Census figures are from 2011, and based on that about 81.35 crore people can be covered by the NFSA. However, Food Ministry data show that of the accepted figure of 81.35 crore, 98.05 per cent, or 79.77 crore persons, had been identified until July 2022. Thus, even with the ceiling fixed at 81.35 crore, states can still identify and add about 1.58 crore people under the NFSA.

#### **How is the PM-GKAY different from the NFSA?**

The NFSA is a right-based scheme under a law of Parliament, while the PM-GKAY is a scheme announced by the executive as a top-up to the entitlements of beneficiaries covered under the NFSA.

So, only those people who were already getting subsidised foodgrains can get free foodgrains under the PM-GKAY. The PM-GKAY provides additional benefits to NFSA beneficiaries, but does not cover additional beneficiaries beyond the accepted limit of 81.35 crore persons under the NFSA.

#### **Has the free ration scheme benefited the BJP in the recent polls?**

The scheme, which amplified the BJP’s message of welfare politics, is believed to have helped the party in state elections. This understanding is supported by the government’s decision to extend the scheme just ahead of the UP elections.



Across UP, Chief Minister Yogi Adityanath and Prime Minister Narendra Modi were appreciated for the free ration scheme. “He has not left us starving during the pandemic”, was the most common refrain.

In Uttarakhand, BJP leaders said it was Prime Minister Modi’s welfare initiatives that helped the party overcome anti-incumbency.

**So will the decision to extend the scheme help the BJP in the coming elections to the Gujarat and Himachal Pradesh Assemblies as well?**

Ahead of a new round of important elections, welfare measures initiated by the central government are likely to be a talking point. In the assessment of the party, its Chief Ministers in the two states are not highly popular, and its trump card continues to be the PM.

According to party leaders, the BJP cannot afford a situation in which the PM or his party are seen to be against the so-called “freebies”, or “revdi”, as Modi has referred to them. “In the backdrop of the debate on the freebies, initiated by the Prime Minister himself, the BJP has to tread cautiously in its strategy for these elections,” a BJP leader said.

It has been pointed out, however, that the percentage of people covered under the NFSA in states like Gujarat and Himachal is lower than the national ratio. While the national population coverage is 67.5 per cent under NFSA, only 63.40 per cent of Gujarat’s 6.03 crore population is covered. The overall coverage under the food security law in Himachal is even lower — 53.69 per cent of the 68.57 lakh population.

## AUTOMATION HAS IMPACTED LOWER-LEVEL JOBS IN BANKS

On Wednesday, Business Standard reported that the Union Finance Ministry had asked the heads of public sector banks (PSBs) for a plan to improve employee count. A week ago, BusinessLine had reported that vacancies announced for clerical posts had significantly decreased this year. The report also showed a declining interest in bank jobs, with increasingly fewer candidates registering for the recruitment/selection programmes. Earlier this year, on March 28-29, the All India Bank Employees’ Association carried out a strike insisting that recruitment of workers be increased, among other demands.

The strike and the recent news reports together show that the problem of declining manpower has reached an inflection point. In fact, the cutback on hirings is more pronounced among clerks and sub-staff, while the number of officers has remained constant. This trend was observed in both PSBs and private sector banks (PVBs). However, it is worth noting that the number of officers in PVBs is three times higher than in the PSBs.

### Reasons for decline in strength

Data show increased ATM usage, surging online and mobile transactions, and a reduction in the number of new bank branches have reduced footfalls in banks and led to the rapid decline in the strength of clerical staff.

While the staff in PVBs went up from over 92,000 in FY05 to 5.7 lakh in FY21, the corresponding numbers for PSBs have remained stagnant — 7.48 lakh in FY05 and 7.83 lakh in FY21. In FY06, each working office had 6.6 clerical staff on average, which more than halved to 3 in FY21. Similarly, the number of sub-staff per office reduced from 3.3 to 1.1 in the observed period.



Interestingly, in FY21 there were 14.7 officers for every functioning office of PVBs compared to just 4.3 per office in PSBs. Such a high officer ratio in PVBs meant the disparity between clerical and officer positions was much wider than in PSBs.

The number of ATM withdrawals using debit cards in PSBs had more than doubled — from over 31 crore to 64 crore between 2012 and 2019. A similar but muted increase was recorded in PVBs. A sharp reduction in ATM withdrawals was observed in PSBs after the pandemic outbreak in 2020. Interestingly, the withdrawals did not reach the pre-pandemic levels even in the later years.

Both the volume and value of UPI transactions skyrocketed in the pandemic period. This, along with a similar surge in other online transactions, led to a sharp fall in ATM usage post-2020.

In both PSBs and PVBs, this number of opening of new branches declined rapidly post-2016.

The disruption of clerical recruitments due to the advent of machines and core banking solutions is here to stay. And so, it will be interesting to see the response of banks to the Finance Ministry's latest push for more hirings.

## RBI, INFLATION TARGETING, AND THE LIMITS OF MONETARY POLICY

When, in May 2016, India adopted inflation targeting as a policy goal enshrined in law, it also embraced the idea of central bank “independence with accountability”. Under the new statutory framework, the central government would, in consultation with the Reserve Bank of India (RBI), set an inflation target based on the consumer price index (CPI) once every five years. The RBI was entrusted with the responsibility of meeting this target (“accountability”), for which it would be given “independence” in the conduct of monetary policy.

But in the situation that the economy today is in, the RBI is struggling to be accountable and, at the same time, having to increasingly depend on the government for fulfilling its mandate.

### **Failure of accountability**

#### **Take accountability, to begin with.**

The Centre, under section 45ZA of the RBI Act, 1934, has fixed the CPI inflation target at 4% with an “upper tolerance limit” of 6%. However, actual year-on-year inflation in 2022 has ruled above 6% every single month from January to August. If it does so in September as well, the RBI, under section 45ZN of the same law, will have to submit a report to the Centre on “the reasons for failure to achieve the inflation target” and “remedial actions proposed to be taken by the Bank”. In this case, “failure” is defined as inflation being more than the upper tolerance level of the target “for any three consecutive quarters”.

#### **Accountability has been a relatively new problem though.**

During the Narendra Modi government's first term, roughly from April 2014 to March 2019 (Modi 1.0), CPI inflation was above 6% only in 6 out of 60 months. Moreover, 5 of those 6 months were in 2014, well before the RBI Act was amended to provide a statutory basis for inflation targeting.

Overshooting of the inflation target has been more during the Modi government's second term (Modi 2.0). In the 41 months from April 2019, inflation has exceeded 6% in as many as 21. In other words, a failure rate of over 50%, as against 10% during Modi 1.0. Also, average CPI inflation was 4.5% during Modi 1.0, whereas it has been 5.7% so far in Modi 2.0.





### Reason for this situation

There's a simple reason for the RBI's "failure" to adhere to its inflation-targeting mandate. It has to do with food and beverage items, which have a combined 45.86% weight in the overall CPI.

During Modi 1.0, food inflation was lower than general inflation in 38 out of the 60 months, with the former averaging just 3.5%. Thus, while inflation overall was benign (average of 4.5%), food inflation was even more so. It has been quite the other way round during Modi 2.0, with average CFPI inflation, at 6.3%, more than the 5.7% for general inflation. Also, food inflation has been lower than CPI inflation in only 21 out of 41 months. While CPI inflation has risen and overshot the 6% target, especially in recent months, the acceleration has been all the more for food inflation since late-2021. The latter has also tended to exhibit greater volatility during Modi 2.0, which is clear from the charts.

Simply put, both the "success" of inflation targeting in Modi 1.0 and "failure" in Modi 2.0 has been largely courtesy of food prices.

### Monetary dependence

That links up to the second issue of monetary policy independence — which basically refers to the central bank being insulated from government interference or electoral pressure in setting its interest rates with a view to achieving low and stable inflation.

But therein lies the irony: The preponderant weight of food items in the Indian consumption basket and hence its CPI — in contrast to developed countries where their shares are hardly 10-25% — makes inflation that much less amenable to control through repo interest rate or cash reserve ratio hikes. The RBI, then, is forced to rely more on government action to meet inflation targets. Far from acting independently — using monetary policy tools that seek to curb demand by raising borrowing costs for firms and consumers — it has to depend on "supply-side" measures by the government. That translates into monetary dependence, not independence.

To get an idea of the government's supply-side actions that have made the RBI's job easier, consider the following:

In the last one year, the effective import duty on crude and refined palm oil has come down from 30.25% and 41.25% to 5.5% and 13.75%, respectively. It's been even sharper — from 30.25% to nil — for crude soyabean and sunflower oil.

On May 13, this year, the Modi government banned exports of wheat. This was extended to wheat flour — including atta, maida and rava/ sooji (semolina) — on August 27.

On September 8, exports of broken rice were prohibited. Besides, a 20% duty was imposed on shipments of all other non-parboiled non-basmati rice.

On May 24, sugar exports were moved from the "free" to "restricted" category. Further, total exports for the 2021-22 sugar year (October-September) were capped at 10 million tonnes, which was raised to 11.2 million tonnes on August 1. The export quota for the next sugar year is yet to be announced.

On August 12, the Centre directed states and union territories to force pulses traders/millers to declare their stocks of tur (pigeon-pea) and upload this information on a weekly basis.



### Implications of this

The framework of inflation targeting and central bank “independence with accountability” worked well during Modi 1.0. That period was characterised by benign food (and fuel) prices, both domestic and globally. The RBI could, therefore, act in almost splendid isolation and pursue its goal of price stability without being constrained by government intervention or even fiscal policy.

Things have been different in Modi 2.0. The last two years or less have seen a resurgence of inflation, driven mainly by supply-side factors — from the pandemic and the war in Ukraine to extreme weather events. The last includes excess rain during September-January 2021-22, the heat wave in March-April and the deficient monsoon in the Gangetic plain states this time.

These — along with skyrocketing prices of fuel, which have a 6.84% weight in the CPI, over and above the 45.86% of food — have rendered the RBI’s demand-side toolkit to fight inflation ineffective.

Wanting to be left alone is one thing. But this is a battle the central bank cannot win without the government.

### RBI SHOULD LET THE MARKET DECIDE THE FATE OF THE RUPEE

Last week, the US Federal Reserve raised the benchmark federal funds rate by 75 basis points for the third straight time. While this was expected, the tone of the policy was markedly hawkish as the Fed sought to underline its commitment to tackle inflation, which remains well above target. The central bank signalled significantly higher rates than was widely anticipated, dousing expectations of policy rates being eased next year. This unexpectedly hawkish commentary roiled global markets. The effects were felt across asset classes, and markets.

With the Fed tightening aggressively, the dollar has strengthened, and currencies of both developed and emerging economies have come under pressure. The DXY, the dollar index, has surged — it is currently trading upwards of 113, up more than 16 per cent since the beginning of the calendar year. The euro has fallen to a new 20-year low as elevated inflation, a persisting energy crisis, and the slow pace of rate hikes are weighing down the currency. The sterling has also fallen, declining by almost 5 per cent on Monday alone to an all-time low after the new government, headed by Liz Truss, announced new fiscal measures. The yen is also facing pressure. Late last week, with the currency plunging to a 24-year low, hovering around the key level of 145 against the dollar, Japan intervened in the markets for the first time since 1998 to strengthen the currency. China has also unveiled measures to increase the costs of betting against the yuan using derivatives.

Until recently, the Reserve Bank of India had been actively intervening in the currency markets. The central bank’s foreign exchange reserves have fallen by around \$90 billion over the past year, providing some sense of the extent of its intervention. Worryingly, the pace of intervention had gathered steam over the past few months. However, after the recent US Fed meeting which signalled its hawkish stance, there are indications that the central bank has slowed the pace of its interventions. After hovering around the psychological mark of 80 against the dollar till now, the rupee has breached this level — on Tuesday, the currency ended the day at 81.58 against the dollar. But considering the extent of tightening the Fed envisages over the coming months, the pressure on the rupee is unlikely to subside. The inflationary implications of a weaker currency are likely to weigh on the members of the monetary policy committee when they meet over the



next few days, complicating matters. But even as the RBI is unlikely to stop intervening in currency markets, considering the scale and speed of the drawdown of its reserves, the central bank should be circumspect about how it proceeds as the global economic environment becomes increasingly challenging. It should allow the rupee to adjust to market realities.

## THE DRAFT TELECOMMUNICATION BILL, 2022

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

The Ministry of Communications released a draft of the Indian Telecommunication Bill, 2022 last week for public comments. Since then, the draft has generated a significant amount of discussion on various changes that it proposes to make to the current telecom regulatory framework. The Minister for Communications, Ashwini Vaishnaw, has stated that the Bill would become law in the next 6-10 months.

### **What is the draft Indian Telecommunication Bill, 2022?**

The draft Indian Telecommunication Bill is an attempt by the government to update the extant regulatory framework in keeping with the advancements and challenges in the sector. This was much needed given that the three main legislations that occupy this domain are considerably outdated, with the most recent of these having been enacted more than 70 years back. These legislations are the Indian Telegraph Act enacted in 1885, the Indian Wireless Telegraphy Act enacted in 1933 and the Telegraph Wires (Unlawful) Possession Act in 1950. The Indian Telecommunication Bill looks to repeal these legislations and “restructure the legal and regulatory framework” for the telecommunications sector.

### **How does the draft telecommunication Bill affect over-the-top communication services?**

Over-the-top (OTT) communication services refer to services that provide real time person-to-person telecommunication services. Some popular examples of these include messaging platforms like Whatsapp, Telegram, Signal, Messenger, Duo, Google Meet etc. These platforms use the network infrastructure of telecom service providers like Airtel, Vodafone and Jio and provide features that compete with telecommunication services such as voice calls and SMS services. Telecom Service Providers (TSPs) allege that these features result in a double whammy for them as they cut into their sources of revenue (voice calls, SMS) while not having to deal with infrastructure and licensing costs that they have to undertake. Therefore, TSPs have been demanding a level playing field with OTT services.

The current draft of the Bill expands the definition of “telecommunication services” to include OTT communication services. As a consequence of this, OTT telecommunication services may be subject to the same licensing conditions as TSPs. Under the extant framework, TSPs have to be issued the Unified Access Service Licence (UASL) for them to be able to provide telecom services in India. If OTT communication services are required to obtain the same licence, they would also be subject to a number of conditions such as maintaining ‘know your customer’ details of their users, adhering to certain encryption regulations and allowing lawful access to the government of their equipment and networks.

### **What are some of the consumer protection measures in the draft Bill?**

To curtail the ever-increasing incidence of spam calls and frauds, the draft Bill proposes that the identity of the person communicating using any form of telecommunication services shall be



available to the user receiving such communication. This would mean that unlike now where only the phone number of the person making the communication is displayed, going forward the name of the person would also be displayed. As per the Communications Minister, this facility would not only be available for voice calls but also for users of OTT communication services.

The draft Bill obligates licence holders to identify the users of its service through a verifiable mode of identification. To ensure that a user provides correct details, the draft Bill penalises providing wrong identification details with a ₹50,000 fine and suspending the operation of the specific mobile number or barring the person from using the telecom service for a certain duration. Further, the draft Bill also provides that commercial communications which are advertising and promotional in nature should be made only with the prior consent of a subscriber. While the Telecom Regulatory Authority of India (TRAI) has previously issued the “Telecom Commercial Communications Customer Preference Regulations” in 2018, spam communications and sharing of contact details without any safeguards continues to be rampant. Its inclusion in the draft Bill takes it out from the purview of TRAI and gives government the power to take stringent measures against violators.

#### **How does the draft Bill impact the position of the TRAI?**

The TRAI was set up in 1997 as an independent and specialised regulator for the telecom sector. Given that the government is a major player in the telecom sector in various roles such as provisioning of services, licensing and allocating spectrum, the need was felt to institute a regulator that is at an arms’ length from the government to ensure a level playing field, fairness for private TSPs and for the protection of consumer interests.

However, the current draft considerably dilutes TRAI’s position in a number of ways reducing it from a regulatory to a recommendatory body. First, the government would no longer be required to seek recommendations from the TRAI before issuing licences. Second, it also removes the power of the TRAI to requisition from the government information or documents that are necessary to make such recommendations. Moreover, the Department of Telecommunications (DoT) will no longer be required to refer back to TRAI the recommendations for reconsideration — those recommendations that it does not agree with, as it was required to do previously. The removal of such powers would not be keeping with international practice where telecom regulators are endowed with a greater degree of independence to ensure that investor confidence and consumer protection is maintained in the market.

#### **What are the draft Bill’s provisions on internet shutdowns?**

For the first time in the Indian legal framework, a specific provision enabling the government to order suspension of internet power has been introduced through the draft Bill. Currently, suspension of internet services is ordered under the Temporary Suspension of Telecom Services (Public Emergency and Public Safety) Rules, 2017 that have been made under the Indian Telegraph Act, 1885. However, civil society has raised concerns that the proposed provision gives the government power to order internet shutdowns while failing to incorporate safeguards such as judicial oversight that have been recommended by the Standing Committee on Information Technology.

#### **How does the Bill facilitate TSPs?**

The draft Bill clears up a lot of confusion around the allocation of spectrum. It lays down that while the primary route for allocation of the spectrum is auction, when spectrum is to be allocated for





certain functions of the government such as defence or transportation, the administrative process is to be followed. It also allows the TSP to exploit its spectrum resource fully by enabling sharing, trading, leasing, surrendering or returning unutilised spectrum. The Bill also simplifies the process for restructuring, merging or demerging.

On the issue of right of way (the legal framework for setting up telecom towers), it mandates that land owned by a public entity should be available expeditiously unless there is an express ground of refusal. This is likely to face opposition from States which have the power to administer lands within their territorial jurisdiction. Lastly, the draft allows the funds under the Universal Service Obligation Fund to be utilised for other purposes such as urban areas connectivity, research etc, expanding its current mandate from the limited aspect of enhancing rural connectivity.

#### WHY FESTIVE SALES ARE LIKELY TO BRING CHEER FOR E-TAILERS

Two of the country's biggest e-commerce platforms, Flipkart and Amazon, have their flagship sales — Big Billion Days and Great Indian Festival, respectively — ongoing since September 23.

In the first two days of the ongoing festive sales by e-commerce platforms, the number of orders have been 28 per cent higher compared to last year. Over two-thirds of the orders are coming from tier-2 and tier-3 towns and cities. Every year, e-commerce companies launch these festive sales to drive consumption, but after two years of Covid-caused lull, this year assumes greater significance as platforms, sellers, logistics partners and even banks come together to attract shoppers to these platforms.

#### **Which e-commerce platforms have festive sales ongoing?**

Two of the country's biggest e-commerce platforms, Flipkart and Amazon, have their flagship sales — Big Billion Days and Great Indian Festival, respectively — ongoing since September 23. Social commerce player Meesho too has launched the Meesho Mega Blockbuster Sale, while Reliance Retail's JioMart launched a month-long Tyohaar Ready Sale. Snapdeal has also launched its 'Toofani Sale — Festive Dhamaka'. These sales tend to drive users to high-volume goods like consumer electronics, mobiles, kitchen appliances, personal care goods, apparel, etc, by offering deep discounts on such products.

#### **Aren't e-commerce platforms prohibited from offering discounts?**

Yes, e-commerce platforms with foreign investment are prohibited by the foreign direct investment (FDI) norms from offering discounts themselves. Many of the discount deals offered on these portals during the festive sales are offered either by sellers themselves, brand partners such as electronics brand manufacturers or banking partners like SBI Card, HDFC Bank, Axis Bank, etc. However, some platforms are incentivising sellers to offer these discounts to drive volumes.

For example, earlier this month, weeks before the sales went live, Amazon announced that all new sellers registering on the platform between August 28 and October 26 and launching within 90 days from the date of registration shall be eligible to avail 50 per cent waiver on selling fees across all categories. Flipkart had also informed sellers that it would charge a one-time fee of Rs 5 on orders received during the pre-Big Billion Days sale, and that the company would waive off that fee for sellers who later participate in the flagship event from September 23-30.

#### **Why are these festive sales vital for e-commerce platforms and how have they fared this year?**



According to industry estimates, in the last five years, e-commerce platforms have derived almost a fifth of their annual gross merchandise value (GMV) from the week-long festive sale periods. For example, in 2021, of the total online retail GMV of \$50.5 billion, festive season accounted for \$9.3 billion; while in 2020, it was \$7.4 billion out of the annual GMV of \$38.2 billion. For platforms like Amazon, the sales also serve as a growth engine for loyalty programs such as Amazon Prime. According to the company, Amazon.in saw the single largest day of Prime signups — 1.9 times higher than last year — with 68 per cent coming from Tier 2 and 3 cities. Social commerce platform Meesho said that Tier 2, 3 and 4 cities accounted for approximately 85 per cent of orders on day one of its sale — with orders coming in from places including, Jamnagar, Alappuzha, Chhindwara, Davengere, Hassan, Gopalganj, Guwahati, Siwan, Thanjavur and Ambikapur. As per Unicommerce, a SaaS platform servicing e-commerce companies, personal care segment is the fastest growing segment with over 70 per cent year-on-year (y-o-y) order volume growth during the first two days of the festive season sale of 2022. While the electronics segment has reported a 48 per cent y-o-y order volume growth (excluding mobile phones). The strong growth of electronics is driven by audio products and smart wearables. The fashion industry continues to be the dominant category, with maximum order volumes.

#### TO BETTER TRACK PLI CLAIMS, GOVT FLOATS DIGITAL PLATFORMS FOR DATA SHARING

In a move to tighten the incentive disbursement system under the government's flagship incentive schemes for electric vehicles, the Heavy Industries Ministry is moving from a paper-based subsidy claims mechanism to a new digital platform that will track the value addition achieved by a vehicle manufacturer using domestically produced inputs from equipment manufacturers.

Under this new platform, starting October 1, an IT-enabled system based on Application Programming Interface or API, would be leveraged to ensure that data pertaining to the net value addition achieved during the manufacturing process would automatically be fed into the Ministry's portal from the vehicle manufacturers' enterprise resource planning (ERP) systems. This will enable traceability of equipment and inputs with their complete digital footprint. ERP is an application software that organisations use to manage business activities.

Currently, companies file this in the physical format to claim incentives under the Faster Adoption and Manufacturing of Electric and Hybrid Vehicles in India (FAME) scheme and other flagship schemes such as the Productivity-Linked Incentive (PLI).

This is significant since the government's revenue intelligence agency had flagged a discrepancy in the process related to claims made by some two-wheeler manufacturers who allegedly violated localisation norms while availing of subsidies under the electric vehicle promotion scheme.

#### Checking misuse by industry

Migrating to a digital platform is meant to bring in transparency in data-sharing between companies seeking incentives and the government. This comes when some companies have been found to have allegedly claimed incentives despite not having achieved their respective target to manufacture electric vehicles in the country.

However, Government officials indicated that the plan to migrate to a digital platform has been in the works even before these discrepancies surfaced and this could be replicated in other PLI-linked sectors. Indeed, this has already been introduced for the FAME scheme.



Under the second phase of FAME, the government's focus is on electrification of public transportation and shared transportation and a budgetary support of Rs 10,000 crore has been allocated for the scheme. Electric Vehicle companies are required to source a bulk of components locally to avail of incentives under the FAME-II scheme.

The heavy industries ministry also manages the Rs 25,938-crore PLI scheme for automobile and the auto component sector and made a similar portal for monitoring localisation content of products availing incentives under the scheme.

The PLI scheme for the automobile and auto component industry proposes financial incentives to boost domestic manufacturing of advanced automotive technology products and to attract investments in the automotive manufacturing value chain.

Its prime objectives include creating economies of scale and building a robust supply chain in areas of advanced products so that Indian manufacturers can move up the global value chain and benefit from the "China Plus One" strategy of multinational companies.

### WHY ORACLE HAS BEEN FINED \$23 MILLION OVER 'IMPROPER CONDUCT' IN INDIA, OTHER COUNTRIES

Technology firm Oracle has agreed to pay \$23 million to settle charges with the United States Securities and Exchange Commission (SEC) after it was accused of violating the Foreign Corrupt Practices Act (FCPA), the US body said on September 27.

The charge is that Oracle's subsidiaries in India, Turkey and UAE created and used slush funds – money that is improperly accounted typically for illicit purposes – to "bribe foreign officials" in return for business between 2016 and 2019.

This is the second instance in a decade where Oracle has been fined over "improper conduct" displayed by its India subsidiary.

Without admitting or denying the SEC's findings, Oracle has agreed to cease and desist from committing violations of the anti-bribery, books and records, and internal accounting controls provisions of the FCPA and to pay approximately \$8 million in disgorgement and a \$15 million penalty.

#### **What is the "improper conduct" by the tech firm in India?**

##### **The case in India**

According to the SEC, in 2019, an Oracle India sales employees used "an excessive discount scheme" in connection with a transaction with "a transportation company, a majority of which was owned by the Indian Ministry of Railways".

In January 2019, the sales employees working on the deal, citing intense competition from other original equipment manufacturers, claimed the deal would be lost without a 70 per cent discount on the software component of the deal.

Due to the size of the discount, Oracle required an employee based in France to approve the request. However, the deal was approved without requiring the sales employee to provide further documentary support for it, SEC said. "The Indian state-owned entity's publicly available



procurement website indicated that Oracle India faced no competition because it had mandated the use of Oracle products for the project,” the SEC said.

The SEC also alleged that one of the sales employees involved in the transaction maintained a spreadsheet that indicated \$67,000 was the “buffer” available to potentially make payments to “a specific Indian state-owned entity official”.

A total of approximately \$330,000 was funnelled to an entity with “a reputation for paying state-owned entity officials” and another \$62,000 was paid to an entity controlled by the sales employees responsible for the transaction.

The Ministry of Railways did not respond to a request for comment. A mail sent to Oracle India did not elicit a response either.

#### **What was the previous instance of Oracle India being fined?**

In 2012, Oracle had agreed to pay \$2 million to settle federal civil charges of failing to prevent secret payments in its sales operations in India – amounting to a ‘scam’. At the time, the SEC had said that Oracle violated the Foreign Corrupt Practices Act by allowing its Indian subsidiary to secretly set aside money that went to phoney local vendors.

Oracle ran the risk of the secret funds being used for bribes, the SEC had then said. The agency said the violations occurred from 2005 to 2007. It said the subsidiary sold software licences and services to the Indian government and kept some of the sale proceeds off Oracle’s books. At the time, too, Oracle had neither confirmed or denied the SEC’s findings.

### **5G COMES TO INDIA, SEE WHICH CITIES WILL FIRST GET THESE SERVICES**

Nearly five years after India embarked on the road to launching the next generation of mobile telephony, 5G services have arrived in the country. Prime Minister Narendra Modi on Saturday (October 1) launched 5G services in select cities, ushering in what promises to be an era of ultra high-speed Internet on mobile phones and devices.

#### **Where will 5G services be available first?**

In the first phase of the launch of 5G, Ahmedabad, Bengaluru, Chandigarh, Chennai, Delhi, Gandhinagar, Gurugram, and Hyderabad will be connected to the network. This is broadly on the lines of announcements made by mobile service operators earlier.

Reliance Jio, which was the top spender at this year’s 5G spectrum auctions bidding an amount of more than Rs 88,000 crore, had said in August that it would roll out high-speed mobile Internet services on its 5G network by Diwali in metro cities like Delhi, Mumbai, Chennai, and Kolkata.

And Bharti Airtel, which was the second highest spender in the auction, had said that 5G would be available on its network in all urban areas of the country by the end of 2023. The company had also said that 5G would be available in towns and key rural areas by March 2024.

#### **How will 5G impact your life?**

The Ministry of Communications said in a statement: “5G can unleash new economic opportunities and societal benefits giving it the potential for being a transformational force for Indian society... The cumulative economic impact of 5G on India is expected to reach \$450 billion by 2035.”





Consumers could enjoy superior Internet speeds and benefit from the low latency of 5G. Peak Internet speeds on 5G could touch 10 Gbps compared to 100 Mbps in 4G; while latency in 4G is between 10 and 100 millisecond, in 5G it is expected to be under 1 ms.

Latency is the time it takes for a device to send packets of data and get a response. The smaller the latency, the quicker the response.

#### **When did India start its 5G project?**

Back in 2017, the government had set up a high-level forum of representatives from the industry, academia, government, and regulators to evaluate and approve the roadmap for rolling out 5G.

The main aim of the forum, headed by Prof A J Paulraj of Stanford University, was to keep India's roadmap aligned with global standards, so that the lack of homogeneity in telecom networks witnessed in services up to 4G could be prevented.

The forum submitted its report in 2018. It suggested focusing on areas including regulatory and spectrum policy, application, and use-case labs for developing locally-tailored solutions. Even as research and development for 5G applications continued, the government started allocating spectrum to operators to conduct trials.

In 2019, the telecom department and the sector regulator TRAI started deliberations on spectrum pricing. In August this year, the auction of 5G spectrum, one of the final steps towards launching the services, was completed.

#### **Are all operators employing the same 5G technology?**

5G networks are deployed mainly on two modes: standalone and non-standalone. Each architecture has its advantages and disadvantages, and the path chosen by operators primarily reflects their view of the market for the new technology, and the consequent rollout strategy.

In the standalone mode, which Jio has chosen, the 5G network operates with dedicated equipment and runs parallel to the existing 4G network. Jio has committed an investment of Rs 2 lakh crore for its standalone 5G network.

In the non-standalone mode, the 5G network is supported by the 4G core infrastructure. Given that the non-standalone networks are built on existing infrastructure, the initial cost and rollout times are significantly lower. The non-standalone mode, which Bharti Airtel has opted for, lets operators maximise the utilisation of existing network infrastructure with relatively lower investment.

Non-standalone networks are generally considered to be a stepping stone, and global precedent suggests operators who have launched non-standalone 5G networks eventually transition to standalone networks.

The biggest difference in the two architectures is the compatibility with existing device ecosystems. Most smartphones today have capability to connect to non-standalone 5G networks — which are essentially 5G airwaves transmitted through 4G networks — and will require software updates by their OEMs to be able to connect to standalone networks.



## LIFE & SCIENCE

### THE NASA SPACECRAFT-ASTEROID COLLISION

#### The story so far:

On September 27, at 4:44 am IST, the DART (Double Asteroid Redirection Test) spacecraft collided with the space rock Dimorphos (just 160 metres wide). NASA has confirmed that the collision of the auto-rickshaw sized 600 kilogram weighing DART, on the football stadium-sized Dimorphos, about five billion kilogram in mass (orbiting around the 780 metres wide primary asteroid Didymos), has deflected the trajectory of the pair of space rocks. This kinetic impact technique, which appears as the climax of Hollywood sci-fi movies like Deep Impact and Armageddon, is also known as the 'kick' method. It could one day save humanity from a potential cataclysmic collision by safely deflecting a killer asteroid on its course towards earth. It could also fuel space mining technologies and unleash the space economy in decades to come.

#### What are asteroids?

Around a construction site, bits and pieces of leftover bricks, unused steel rods, and emptied paint canisters are usually strewn. Likewise, leftover materials from the formation of the sun, earth and planets, through the accretion and agglomeration of giant gas and rocks, are scattered as comets, asteroids and meteoroids in the solar system. Some of these cross their path and collide with earth from time to time, resulting in a spectacular meteor shower. Most rocks are so small that they burn up completely in the atmosphere due to frictional heating. If they are large enough, the charred piece falls through as a meteorite. The falling piece from a meteoroid 140 metres wide or more will be capable of completely wiping out a city like Chennai. The impact would be devastating if it was one or more kilometres wide.

Neither the plot nor NASA's Planetary Defense Coordination Office, made famous by the blockbuster Netflix movie Don't Look Up is imaginary. About 66 million years ago, an asteroid about 10-15 kms struck earth. The tsunami, volcanic eruptions and thick dust clouds ensuing from the blow decimated dinosaurs and nearly 75% of all species. What happened in the past can occur in the future. The chances of a giant asteroid striking earth are small; however, if it did occur, the devastation would be cataclysmic, wiping out the entire human civilisation. While dinosaurs were mute spectators, humans can prepare themselves to face the imminent threat. NASA tracks and keeps a close watch on the nearly 26,115 asteroids whose orbits are dangerously close to earth.

#### What was NASA's mission?

NASA, to put it simply, undertook the 'kick' technique. Compared to the massive Dimorphos, DART is a tiny Goliath. Yet crashing at a breakneck speed of 23,760 kilometres per hour, the momentum is adequate to slash the angular momentum of Dimorphos, making it speed up and move closer to Didymos. All of these reduce the orbital period and the time taken for the moonlet to go around the primary asteroid. The pair's trajectory is thus deflected as the net result of these dynamics. Consider it like this: a fast-moving moped slamming into a truck is sure to undergo a massive crash and burn, yet will veer the massive truck a bit. This is the essence of the 'kick' technique.

The extent of the trajectory change depends on the context. Compare throwing a ball against a solid wall and a sand pit. If the Dimorphos were solid, the crashing craft would make a dent on its surface and skim a tiny bit of its angular momentum, reducing the orbital time by about 75



seconds. However, close-up images transmitted by the DART moments before the fatal collision indicate that Dimorphos is more like a pile of rubble loosely held by gravity. If true, the impact will eject a cascade of debris, each piece carrying away a bit of momentum and energy. And as a net result, the asteroid will suffer a considerable loss. It will speed up more, and the orbit will become nearer to Didymos. The orbital period will then reduce by as much as 10 minutes.

#### **What has been the impact assessment?**

The DART craft carried a high-resolution DRACO (Didymos Reconnaissance and Asteroid Camera for Optical navigation) camera to observe the collision and its consequences. The close-up images until its fatal crash are being analysed. In addition, like a kangaroo with a baby in its pouch, a tiny toaster-sized Italian Space Agency-built Light Italian CubeSat for Imaging of Asteroids (LICIACube) took a piggyback ride with the DART.

The CubeSat was released and deployed two weeks before the impact. Hovering 50 kilometres from the asteroid, the two cameras aboard the CubeSat have captured the plume of the debris ejected by the collision. At 11 million kilometres, the asteroids appear like a blip of dot even through the best of telescopes. As they waltz around each other, once in 11 hours and 55 minutes, Dimorphos and Didymos line up, eclipsing one another. The total brightness of the pair darkens when Dimorphos passes in front of and behind Didymos.

Astronomers will now spend weeks and months observing the periodic change in the brightness using the telescopes to tease out the altered orbital period. All this data is still in process and will help fine-tune the technology.

#### **What are the other possibilities of this technique?**

At the heels of NASA, China is set to deflect a 40m diameter earth-crossing asteroid called 2020 PN1 sometime in 2026. While ostensibly the drive comes from the desire to protect earth from killer asteroids, perhaps the lure of space mining lurks behind. Mining rare earth elements comes with a high environmental cost. In the coming years, the penalty for polluting could make space mining economically viable. If one can tug a mineral-rich asteroid near the Moon or establish a space mining factory between the orbits of earth and Mars, precious mineral resources needed for decades could be easily sourced. The 'kick' technique that deflects asteroids can then be used to move a small asteroid into a convenient position for space mining. Now shelved, NASA's Asteroid Redirect Mission (ARM) aimed at precisely this by bringing a 20-tonne space rock near earth to study and mine. In a way, the DART mission is also part of this frame.

For developing green energy technologies — electric vehicles, solar panels, wind turbines, and energy storage devices — and ushering in the low carbon economy of the future, rare earth elements such as yttrium, niobium, rhodium, palladium, osmium, iridium and scandium are critical. They are short in supply, and asteroid mining, it is believed, could solve the rare earth supply problem.

From the robotic Soviet Luna 16 in the 1970s to U.S. Apollo missions and China's first lunar sample-return mission, Chang'e 5 — all have brought back lunar soil. NASA's Stardust spacecraft returned a canister full of dust from comet Wild-2 captured by an aerogel-based sample collector in 2004. Japan Aerospace Exploration Agency (JAXA)'s Hayabusa 1 to 25143 Itokawa, the Hayabusa 2 to 162173 Ryugu, and NASA's OSIRIS-Rex to near-earth asteroid Bennu are missions to extract and return samples from asteroids.



## A 'NIGHTMARE' FOR FORECASTERS: HERE'S WHY HURRICANES ARE GETTING STRONGER, FASTER

Early on Monday, Hurricane Ian was a tropical storm with heavy rain and winds of at least 73 mph. But experts say the storm is gaining power rapidly and, if recent history is any guide, it could intensify dangerously as it nears Cuba as soon as Monday night.

As Earth's climate warms, more storms are undergoing this kind of rapid intensification, growing quickly from relatively weak tropical storms to Category 3 or higher hurricanes in under 24 hours, sometimes stunning forecasters and giving residents little time to prepare.

Here are key facts about how climate change can rapidly intensify tropical storms.

### **Warming oceans fuel higher winds**

More than 90% of the excess heat from human-caused global warming over the past 50 years has been absorbed by the oceans. Since 1901, sea surface temperatures have risen an average of 0.14 degrees Fahrenheit per decade, according to data from the National Oceanic and Atmospheric Administration.

That's crucial, because storms gather strength over the ocean. And, the warmer the water, the more power they pick up. Higher surface temperatures allow hurricanes to reach higher levels of maximum sustained wind, a common metric used to describe the intensity of a storm.

A 2020 satellite image analysis showed that the likelihood of a hurricane strengthening into a Category 3 storm or higher, with sustained winds above 110 mph, has increased by about 8% a decade since 1979.

### **Those winds intensify more rapidly**

Not only do warmer oceans make storms stronger, they make the rate of intensification more rapid, said Kerry A. Emanuel, a meteorologist and hurricane expert at the Massachusetts Institute of Technology.

Rapid intensification technically refers to an increase of at least 30 knots, or 35 mph, in the maximum sustained winds over a 24-hour period, according to the National Hurricane Center. Researchers have found that the likelihood of a hurricane undergoing rapid intensification has increased to 5% from 1% since the 1980s.

A number of the past decade's most intense Atlantic storms intensified rapidly. Harvey in 2017 was a Category 1 hurricane on the evening of Aug. 24; by the next day, when the storm reached Texas, it was a Category 4 hurricane with 130 mph winds. And later that hurricane season, Maria intensified from a Category 1 to a Category 5 hurricane within just 15 hours.

In 2021, Hurricane Ida strengthened from a Category 1 with 85 mph winds into a near-Category 5 hurricane with 150 mph winds less than 24 hours later. Emanuel said Monday that current conditions were "ideal" for Ian to follow a similar path of development.

### **It's not just warmer oceans**

Several elements other than ocean temperatures affect hurricanes, and scientists are less certain about other climate effects.





One of those elements is vertical wind shear, or a measure of how much the wind changes in speed or direction at increasing heights in the atmosphere. Strong vertical wind shear can inhibit the development of hurricanes by tilting the structure of a storm and by forcing cool, dry air into its core. “It’s like pouring cold water on a fire,” Emanuel said.

In a 2019 study published in Nature Scientific Reports, researchers found that warming temperatures may lead to weakening vertical wind shear, allowing hurricanes approaching the East Coast of the United States to intensify more rapidly.

However, the study’s findings were localized; different effects of warming on wind shear could be observed globally, said Camargo, one of the authors of the study.

The increase in the number of hurricanes that intensify quickly and unpredictably presents a sticky problem for forecasters, whose assessments can affect a community’s preparedness.

The window of time to make a decision gets smaller, Emanuel said. For example, if officials, working with forecasters, issue an evacuation order too early, then they risk unnecessarily sending hundreds of thousands, and sometimes millions, scrambling, jamming highways and snarling transit systems. In some cases, that could be more dangerous, disruptive and costly than staying in place.

“Then, you’ve cried wolf,” Emanuel said. The next time the warning to evacuate goes out, people might not listen.

Make the call too late, though, and there’s no time for people to escape the impacts of a dangerously strong hurricane.

“It’s a forecaster’s worst nightmare,” Emanuel said, for a relatively weak hurricane to develop into a Category 4 or 5 hurricane overnight.

## HOW THIS CYCLONE INTENSITY ESTIMATION TECHNIQUE SAVED MILLIONS OF LIVES ACROSS CONTINENTS

On Tuesday (September 20), the American meteorologist Vernon Dvorak passed away at the age of 100. In the era of advanced satellite technology, Machine Learning (ML), Artificial Intelligence (AI), this key technique, named after him, continues to be widely relied upon by forecasters till date.

### Who was Vernon Dvorak?

Dvorak was an American meteorologist best credited for developing the Dvorak (read as Do-rak) technique in the early 1970s. The technique has been upgraded multiple times since then, and after a recent software update in May this year, it has been named the Advanced Dvorak Technique (ADT), coined by the National Hurricane Centre of the National Oceanic and Atmospheric Administration (NOAA).

The updated technique, the American meteorologists had said, would improve the tropical storm forecasts by many folds as they would have access to sharper and detailed images than ever before.



## MATCHING ECOLOGY WITH AGRICULTURAL ECONOMICS

An ecological niche is the right set of environmental conditions under which an animal or plant species will thrive. A range of ecological niches can occur within an ecosystem. Biodiversity is the result of these niches being occupied by species that are uniquely suited to them. Desert plants, for example, are suited for dry, arid ecological niches because they have the ability to store water in their leaves.

As the world's climate undergoes change, the ability of existing species to hold on to their biogeographic niches may be altered. This has an important bearing on agriculture, as practices and crop choices that have worked well for centuries may no longer be ideal.

Factors that are altered by such changes include the availability of food and nutrients, occurrence of predators and competing species. Non-living, or abiotic factors also affect ecological niches. These include temperature, amount of available light, soil moisture, and so on.

### Niche modelling

Ecologists use such information for conservation efforts as well as for future developments. However, ecological considerations may not correlate well with economic realities. To bridge these two viewpoints, ecological niche modelling can be used to examine economic feasibilities within the context of changing ecological scenarios.

Ecological niche modelling is a predictive tool for identifying new possibilities — new inhabitants for an existing habitat, or new geographical locations where a desirable plant may grow well. The modelling involves the use of computer algorithms to compare data about the environment and to make forecasts about what would be ideal for a given ecological niche.

Compare two places that are geographically apart, say the Madikeri area of Coorg in Karnataka and Gangtok in Sikkim. Both are on hilly terrain. Madikeri is at 1,200 metre above sea level and Gangtok is 1,600 metre above sea level. Average yearly rainfall is 321 cm and 349 cm, respectively. Average relative humidity at 5:30 p.m. is 76% and 83%, respectively. The similarities are many in both regions.

### Where to grow

A recent paper highlights the uses that ecological niche modelling can be put to within the context of India's geographies and agricultural economics (Amit Kumar et al., Scientific Reports, 2022). Researchers at the Institute of Himalayan Bioresource Technology, Palampur, Himachal Pradesh used modelling strategies to examine the economically important spice, saffron.

*Crocus sativus*, the saffron plant, is propagated through underground stems called corms. It is thought to be a native of Greece, and grows best under mediterranean climate conditions. Today, Iran grows nearly 90% of the world's saffron. The flower of the plant has three bright crimson stigmata, which are handpicked when ready and carefully dried for the commercial saffron. Besides adding flavour to food, saffron has many other uses. Ancient Indian medical texts prescribed it for disorders of the nervous system. More recent clinical trials have shown that the administration of 30 mg saffron every day had a significant anti-depressant effect (Toth et al., *Planta Medica*. 2019;85). Some of its chemical constituents have been shown to possess anti-cancer properties.



India produces 5% of the world's saffron. Historically, some of the world's most prized saffron has been grown in old lake beds of Kashmir. The temperate climate of Jammu and Kashmir is well-suited with a well-drained soil of high pH value (6.3 to 8.3), summer temperatures (when flowers develop) of around 25°C and good soil nutrient availability.

#### Using big data

For big data, the authors of the Indian study combined their efforts with openly available global resources. Areas of saffron cultivation in Jammu and Kashmir, Himachal Pradesh and Uttarakhand were compared with 449 locations of saffron cultivation in different parts of the world as documented by the Global Biodiversity Information Facility. Environmental data came from the WorldClim web portal, which provides data on 103 variables, ranging from solar radiation to wind speeds. Terrain data (slope, aspect and elevation) came from the Space shuttle radar topography mission (SRTM) Digital Elevation Model. Several rounds of analysis yielded a map of probable niche areas suitable for growing saffron in India.

The study identified 4,200 square kilometre of new areas suitable for saffron cultivation in places in Jammu and Kashmir, Himachal Pradesh, North Sikkim, Imphal, Manipur and Udagamandalam, Tamil Nadu. Field trials over two seasons at some of these locations obtained a saffron yield that was very close to the average national yield of 2.6 kg per hectare. Will saffron be regularly cultivated in these new areas? From an economic standpoint, the answer should certainly be in the affirmative.

### VAMPIRE FACIAL ANYONE? UNTRAINED HANDS PUSH IT AS A 'POST-COVID' INDULGENCE

A post-COVID rush to wellness centres for an “immunity boost and a healthy glow” has left doctors worried about the quick-fix treatments that these centres promise.

As these “remedies to look good and feel fresh”, packaged so well by the centres, have started gaining traction and drawing customers in huge numbers, doctors have cautioned against making a beeline for these centres, confirming that they have received patients coming in after “magic treatments” go haywire.

What is adding to the worry is the fact that many of these services are now offered at home. So basically invasive healthcare procedures get done without trained doctors and adequate equipment and safety back-up, doctors caution.

Popular treatments include IV drips of essential vitamins and nutrients, vampire facials and repeated chemical peels.

Dr. Amit Bangia, associate director, dermatology, Asian Hospital, says that while COVID-19 pandemic may be on the decline, post-COVID symptoms are persisting. Fatigue and dullness are among the most visible symptoms. The increased screen time during the pandemic too has been enervating. This, coupled with a lack of exercise, poor skincare routine and use of steroids to treat COVID-19, is pushing people into wellness and skincare clinics.

Speaking about the ill-effects of such treatments, he says the market currently has a lot of quick fixes which get done without adequate checks and balance.

“We are getting patients with complaints of cases gone wrong. Take for example a very popular treatment — vampire facial. This involves using the customer's own blood which is extracted and



mixed with other nutrients and used in a procedure. But when offered by untrained and unqualified professionals, who neither understand skin nor the sterile conditions required for the procedure, problems and infections will definitely be seen," he says.

### Tackling stress

Chemists too state that supplements aimed at helping people tackle stress, sleep, anxiety and hair loss are flying off the shelves. "Post COVID, the days of taking Vitamin E, B, C and D supplements, using alternative healthcare support or going by the age-old wisdom of eat-sleep-exercise and keeping stress at bay don't seem to have the same appeal. We have seen a steady and growing market for supplements," said a popular chemist at Central Delhi.

Worried about this, the Delhi Medical Council earlier this month issued a public notice (against salons and such establishments doing hair transplants, another invasive procedure) warning that those performing highly technical procedures that require expertise and skill of a trained professional without the adequate people and infrastructure would invite legal action. "This is following the case of a person's death in Delhi after a hair-transplant surgery went wrong," said Dr. Girish Tyagi, Registrar, Delhi Medical Council.

### Wellness market

The overall wellness market in India comes to ₹490 billion (by some estimates) and wellness services alone make up 40% of this market. The Federation of Indian Chambers of Commerce & Industry, a non-governmental trade association and advocacy group based in India, notes that the wellness industry in India has evolved rapidly from its nascent unstructured beginning in the early 1990s to a comprehensive ecosystem today.

It states that the government faces challenges mainly because the wellness centres are unorganised to a high extent. "There is difficulty in application of control over the unorganised sector, implementing a control mechanism for regular monitoring and auditing unorganised players is tough," it notes. It adds that hurdles in creating awareness in consumers of the benefits and safety of the centres which are compliant and accredited further aggravates the problem.

## A FEAT IN MEDICINE: A NEW ALZHEIMER'S DRUG OFFERS HOPE

For decades, frustrated neurologists had nothing but palliative care to offer as the grey matter covering the brain — which is responsible for processing thoughts and many of the higher functions, such as memory — degenerated progressively in patients with Alzheimer's disease. First identified in 1906, the cognitive disorder has been one of the most difficult challenges for healthcare systems globally. The failure rate of drugs to combat it is 99.6 per cent — for cancer, this rate is around 81 per cent. That's why the result of clinical trials of lecanemab, a new drug developed by pharma companies Biogen and Eisai, has generated hope. On Tuesday, the two companies announced that the drug slowed down the rate of memory and thinking decline in early-stage Alzheimer's patients by 27 per cent. This might seem a modest rate but this is the first time a drug has shown the potential to slow down the onset of dementia.

Lecanemab is an antibody that cleans protein deposits on brain cells, believed by a section of scientists to cause cognitive impairments. Known as the "amyloid hypothesis," their thesis holds that clumps of the protein beta-amyloid accumulate in toxic proportions as the disease progresses. The thesis has been a graveyard for Alzheimer's drug research in the past. In clinical trials, several drugs have shown the ability to reduce the plaque build-up caused by the protein





but they have failed to alter the trajectory of dementia in patients, leading several experts to question the amyloid hypothesis. Last year, another anti-amyloid drug developed by Biogen failed after being approved by the US Food and Drug Administration. Not only did lecanemab clear the amyloid build-up in the brain cells of participants in the 18-month long trial, it also demonstrated a significant effect on their cognitive functions.

More than 50 million people have Alzheimer's worldwide. In the past 20 years, mortality caused by the disease has shot up by more than 120 per cent. Experts believe that these figures do not depict the true extent of the healthcare problem. In many parts of the world, dementia is seen as a fallout of the ageing process and people do not seek medical care. But research has shown that in a large number of cases, the illness begins in the mid to late forties. That's why drug candidates like lecanemab that target early-stage patients could hold the key in the battle against Alzheimer's. For that, pharma research must be accompanied by addressing two other imperatives: Increasing awareness about the disease and making the new medicines accessible to all.

## COVID END IN SIGHT?

The story so far: "We are not there yet, but the end is in sight." At a press conference on September 14, World Health Organization (WHO) director General Tedros Adhanom Ghebreyesus said: "Last week, the number of weekly reported deaths from COVID-19 was the lowest since March 2020. We have never been in a better position to end the pandemic." But the WHO chief also warned that if the world does not seize the opportunity now, there will be more risks ahead.

### What are the numbers now?

As per the ourworldindata COVID-19 dashboard, as of September 16, a total of 4,53,481 new cases had been recorded across the world. On the same day, the cumulative count of cases was 611.33 million. In contrast, the seven day average of new cases hit a peak on January 24, 2022 at 3.44 million cases per day.

### Does this mean the world can let down its guard?

Not yet, according to Dr. Tedros, who, on the contrary, calls for greater energy, a last-mile spurt. "A marathon runner does not stop when the finish line comes into view. She runs harder, with all the energy she has left. So must we," he said during his address.

"We can see the finish line. We're in a winning position. But now is the worst time to stop running. Now is the time to run harder and make sure we cross the line and reap the rewards of all our hard work. If we don't take this opportunity now, we run the risk of more variants, more deaths, more disruption, and more uncertainty," Dr. Tedros further said. He added that the WHO is releasing six policy briefs outlining the key actions that all governments must take to finish the race. The briefs are a summary, based on the evidence and experience of the last 32 months, of what works best to save lives, protect health systems, and avoid social and economic disruption. The briefs are an urgent call for governments to take a hard look at their policies, and strengthen them for COVID-19 and future pathogens with pandemic potential, Dr. Tedros insisted.

### What should be the priority areas?

The WHO chief urged nations to invest in vaccinating 100% of the most at-risk groups, including health workers and older people, indicating that these groups are the highest priority to achieving 70% vaccine coverage. He added that it was important for countries to keep testing and



sequencing for SARS-CoV-2 besides integrating testing and surveillance with similar measures for other respiratory diseases.

Dr. Tedros made a strong case for putting in place a system in order to integrate care for COVID-19 into primary health, and said patients should continue to receive the care that is right for them. While the numbers are dropping globally, it is better to plan for surges of cases, ensuring at the same time that one is always prepared to handle emergency or pandemic situations with the necessary supplies, equipment and health workers. He also called for broad-based strategies for infection prevention and control precautions to protect health workers and non-COVID patients in health facilities. The six policy briefs of the WHO set out guidelines for clinical management of COVID-19; managing infection prevention and control measures for COVID-19 in health care facilities; reaching COVID-19 vaccination targets; COVID-19 infodemic management; and building trust through risk communication and community engagement. In an article in Nature early this year, Aris Katzourakis, a professor who studies viral evolution and genomics at the University of Oxford, argued that rosy assumptions would endanger public health and that policy makers must act now to shape the future, referring to a COVID-19 context. "The best way to prevent more, more-dangerous or more-transmissible variants from emerging is to stop unconstrained spread, and that requires many integrated public-health interventions, including, crucially, vaccine equity."

#### **What about research?**

In an editorial, The Lancet Infectious Diseases acknowledged that it was good news indeed that the link between cases and deaths had weakened, even if it wasn't broken, at least in highly vaccinated countries. The vast research effort that has gone into COVID-19 over the past two years has given the world tools to turn a pandemic disease into a manageable, endemic one, the Lancet paper pointed out. "Better vaccines and treatments will be required to maintain this success, and large parts of the world's population still do not have access to vaccines. However, research organisations, funding bodies, and industry should now lead a compensatory effort that, applying lessons learned from combatting COVID-19, redirects research towards the control of infectious diseases (and, indeed, non-communicable diseases) that take a toll of human life year in and year out."

**DreamIAS**