



# CURRENT AFFAIRS for UPSC

26TH MAY TO 1ST JUNE 2024

DREAMIAS



## INTERNATIONAL

### PRESIDENTIAL FELONY

Donald Trump is now the first ever former U.S. President to become a convicted felon after a New York state jury returned a guilty verdict for all 34 charges in the case relating to hush money that he paid to adult film actor Stormy Daniels in 2016. Mr. Trump has thus been found guilty not only of the relatively less serious charge of falsifying business records — which stemmed from the \$1,30,000 reimbursement that he settled with his former lawyer Michael Cohen after the payout to Ms. Daniels following their alleged affair in 2006 — but also the damaging charge of election fraud linked to his attempt to hide such information from voters on the eve of the 2016 election. The judge has set sentencing for July 11, just ahead of the Republican National Convention in Milwaukee, where party leaders are expected to nominate Mr. Trump as their candidate for the presidential race. While the charge of falsifying business records is punishable by potentially four years in prison, at the sentencing hearing it is likely that, considering Mr Trump's age of 77 years, the lack of a previous conviction and non-violent nature of the crimes, the judge may simply impose a fine or probation. Although the allegations in three other criminal indictments that he faces, relating to federal and state charges of interference in the 2020 election, and the mishandling of classified documents, carry more severe sentences, those cases are bogged down in appeals and are unlikely to enter the trial phase before the November 5 election.

Under the U.S. constitution, the only conditions that presidential candidates would have to meet to seek election to the Oval Office are that they must be a natural born citizen, be at least 35 years old, and must have been a U.S. resident for at least 14 years. In this context, the New York conviction does not bar Mr. Trump from continuing his run as a presidential candidate. Further, it is possible that, even if he is sentenced to time in prison in one or more of the criminal cases, he could govern from behind bars. The more troubling question relates to the polarising effect that his legal travails might have on the public discourse. Reports are suggesting that the guilty verdict appears to be "... helping to unify the Republican Party's disparate factions as GOP officials across the political spectrum rallied behind their embattled presumptive presidential nominee..." Equally, poll surveys in swing States earlier this year had suggested that 53% of voters would not vote for Mr. Trump if any of his criminal cases resulted in a conviction. November 2024 might be the best and final opportunity that American voters will have to decide on whether, after all, they consider Mr. Trump fit to lead their nation.

### HOW WILL IRAN PRESIDENT'S DEATH IMPACT THE REGION?

#### The story so far:

The death of Ebrahim Raisi, Iran's President, and eight others, including Foreign Minister Amir Abdollahian, in a helicopter crash on May 19, has sent shockwaves across the region. The timing of the accident was significant. Tensions remain high in West Asia, particularly after Iran launched its first direct attack on Israel in April. The war in Gaza rages on with Iran backing Hamas and other anti-Israel non-state militants in the region. At home, the regime has seen growing protests in recent years. And now, Iran has to elect a new President amid this uncertainty.



### **How important was Raisi?**

In Iran's semi-representative theocratic system, the role of the elected president is limited compared to that of the Supreme Leader, who is appointed by a clerical body. The President's primary responsibility is to run the day-to-day affairs of the government, while critical policies and long-term strategies are set by the Supreme Leader (read 'the establishment'). But the President and his government have a say on how to implement these policies.

In the past, Iran has seen friction between the establishment and the Presidents as they tried to champion their agenda. But in Raisi, who was elected President in 2021, the establishment found a staunch ally who hardly strayed from the line set by the Supreme Leader. Raisi oversaw a marked shift from the Hassan Rouhani years when Iran pursued dialogue with the West and reached a nuclear deal in 2015 (which was sabotaged by the U.S. in 2018). During Raisi's tenure, Iran sought closer strategic and economic cooperation with Russia and China, doubled down on its support for the so-called 'axis of resistance' (non-state actors such as Hamas, Houthis and Hezbollah) and expanded the country's nuclear programme. Tehran also adopted a more aggressive policy towards Israel, which saw the April 14 drone and missile attack.

### **Will his death alter Iran's policies?**

The President's death is unlikely to bring in any serious change to Iran's foreign policy. But it is highly likely that the regime's focus would shift to the transition at home. Even before Raisi's death was formally announced, Supreme Leader Ayatollah Ali Khamenei told Iranians that governance would not be disrupted. The message from the Supreme Leader is that the system reigns supreme, not individuals, and the status quo prevails. Iran has lost several high profile officials in recent years, from Qassem Soleimani, the charismatic Quds Force General, to Mohsen Fakhrazadeh, the country's top nuclear scientist. But the loss of key figures does not affect the national project.

However, Raisi's death poses two succession challenges to Iran's leaders. One, it has to quickly elect the next President. The second challenge is to identify a potential successor to Mr. Khamenei. In the past, different influential clerics were seen as his prospective successors, such as Ali Akbar Hashemi Rafsanjani and Mahmoud Hashemi Shahroudi. Rafsanjani died in 2017 and Shahroudi in 2018. In recent years, Raisi, a hardline cleric, an elected President and a former judicial chief, was seen as a potential successor. His death leaves a huge void in the corridors of power in Tehran.

### **What does Raisi's death mean for India?**

India has built a good relationship with Iran since the revolution of 1979. Even though trade ties have taken a beating in recent years, owing to American sanctions on Iran, both sides stayed invested in the overall bilateral partnership. One good example of this partnership is the Chabahar port project where India has made investments worth millions. External Affairs Minister S. Jaishankar had attended Raisi's inauguration in August 2021. In January, Mr. Jaishankar travelled again to Tehran to meet its leaders at a time when Houthis, the Iran-backed Yemeni Shia militants, were carrying out attacks against vessels in the Red Sea. India had refused to join a U.S.-led coalition to attack the Houthis.

Earlier this month, India signed a long-term agreement to further develop and operate one of the two terminals of the Chabahar port, formalising a deal that has been in the works for years. On May 20, a day after the accident, Mr. Jaishankar said India and Iran reached the Chabahar agreement "because of the interest and initiative" of President Raisi and Foreign Minister Abdollahian. India was careful not to take a direct position in the West Asian crisis. When tensions



broke out between Iran and Israel, India expressed deep concerns but stopped short of condemning any party. The fact that India sent Vice President Jagdeep Dhankhar to Tehran to offer condolences shows that retaining the current momentum in ties remains a priority for New Delhi.

## PUNISHING HAMAS

The International Court of Justice's ruling, that Israel must immediately stop its military offensive in Rafah, the southernmost city of Gaza, is the latest setback for the Jewish nation in a war that grinds on with heavy civilian casualties and no end in sight. In January, while hearing a genocide case against Israel that was filed by South Africa, the United Nation's top court had asked Tel Aviv to take measures to prevent acts of genocide in Gaza. The court refused to order a ceasefire then, but has now come to the conclusion that Israel's Rafah offensive could lead to a complete or partial destruction of the Palestinian population in the city. The court has also asked Israel to keep the Rafah crossing with Egypt open for aid delivery and allow UN investigators to gather evidence about alleged war crimes, besides demanding an immediate release of all hostages. The ICJ ruling comes days after the Chief Prosecutor of the International Criminal Court, Karim Khan, claimed that Israeli and Hamas leaders had committed war crimes and crimes against humanity in Gaza, and sought arrest warrants against Israel's Prime Minister Benjamin Netanyahu, its Defence Minister Yoav Gallant and Hamas leaders Yahya Sinwar, Mohammed Deif and Ismail Haniyeh. Israel appears to be unperturbed by these developments. Immediately after the ICJ issued its ruling, Israeli fighter jets pounded Rafah. The ICJ rulings are binding, but the court lacks the mechanisms to implement them.

More than seven months after the war began, which was triggered by Hamas's October 7 cross border attack on Israel in which at least 1,200 people were killed, Tel Aviv seems to be fighting in the dark. When it launched the war, Mr. Netanyahu said he would crush Hamas and release hostages. Today, Israel is fighting Hamas even in northern and central Gaza where it had earlier declared victory. At least 120 hostages, most of them feared dead, are still in Hamas's captivity. The war is marked not just by the incompetence of the Israeli Defence Forces. Its disproportionate use of force on Gaza has made the strip into a graveyard, which has turned international public opinion against Israel. Last week's decision by Norway, Ireland and Spain to recognise the state of Palestine shows how the line of thinking is changing even in the West. Mr. Netanyahu appears to be irrationally adamant today. His only focus is on a war that has done little to bolster Israel's security. Israel has not met its military objectives; its deterrence has been broken twice, peace with Arabs stands shattered, it stands isolated in the world, there could be an arrest warrant against its leaders and there is a ruling by the ICJ against the way it is conducting the war. By seeking to punish the entire Palestinian population in Gaza for what Hamas did, Mr. Netanyahu is rendering Israel's standing weaker and the international support for the Palestinian cause to grow stronger.

## WHY DOES INSTABILITY AND CHAOS PERSIST IN HAITI?

### The story so far:

Following a three-month forced shutdown, Haiti's main international airport in Port-au-Prince reopened, sparking hopes for shipment of essential products. However, gang violence persists in the capital, though most of the gangs' demands have been addressed. Meanwhile, after months of delay due to legal obstacles and violence, an advance team of the Kenyan special forces police landed in Haiti to combat the instability.



### **What is being done for stability?**

After Prime Minister Ariel Henry's resignation on April 24, the formation of a Council with seven members was the first major development. The Council has been tasked with restoring order in Haiti, setting the agenda of a new Cabinet, forming a national security council, and appointing an electoral commission to help conduct polls. It enjoys the backing of the Caribbean countries and the U.S. Caricom, a Caribbean trade bloc which helped form the council, said that the installation of the "politically inclusive council signals the possibility of a new beginning for Haiti." While Finance Minister Michel Patrick Boisvert was appointed as interim Prime Minister, on April 30, former Minister Fritz Bélizaire was chosen for the post by the Council.

### **What is the situation at present?**

Though there is a Council, there is also a divide. During its first task of choosing a Prime Minister, four of the seven voting members chose Mr. Bélizaire. This decision to appoint the little-known official was taken without consulting the rest of the council or holding a formal vote. This divide has reportedly strengthened worries of the Council using its position to further its own corrupt needs, following a pattern consistent with previous political officials in Haiti.

Moreover, gang violence continues. The insufficiently armed national police are still unable to counter the violence. Gang violence has become a part of daily life in Haiti over the last two decades, enabled by a weakened security apparatus, lack of effective law enforcement and widespread impunity. In the first three months of 2024, as per UN estimates, more than one person was killed due to gang violence every hour.

### **Why does gang violence continue?**

One of the driving forces behind gang violence was the continued control exercised by Mr. Henry, and it was expected that his resignation would allow for a semblance of peace and stability. However, not only has the violence continued (though there has been a reduction), there are new concerns.

In May, UNICEF's Representative in Haiti, Bruno Maes, noted that the "health system is on the verge of collapse" as it is faced with "violence, mass displacement, dangerous epidemic and increasing malnutrition." Six out of 10 hospitals that are operational in the country are barely managing to function, and the biggest problem currently is the "strangling of supply chains." About 1.6 million of the 4.4 million in Haiti face emergency levels of food insecurity, and the expected arrival of the monsoons will bring with it waterborne diseases such as cholera.

### **What is next for Haiti?**

There are three specific challenges for Haiti. First, the divide within the transitional Council underscores the inherently fragile political landscape of the country. A rocky start may set the tone for the rest of its decisions and the country's faith in it. Second, the persistent threat posed by armed gangs continues to loom large over Haiti, perpetuating a cycle of violence and insecurity that hampers efforts to restore law and order. Gangs have warned of more violence if they are not given a seat at the table with the Council, and if their demand for amnesty for their crimes is not granted.

Third, the deployment of a UN-backed security mission, comprised of Kenyan police forces, has sparked controversy and raised concerns about potential violation of human rights. While the



mission aims to bolster efforts to combat gang violence and restore stability, there are fears that it may inadvertently exacerbate tensions and contribute to human rights abuses.

## A COUNTRY WHERE DIVORCE IS ILLEGAL: HOW THE PHILIPPINES IS ATTEMPTING TO ALLOW LEGAL SEPARATION

The Philippines, the only country other than the Vatican where most married couples are not allowed to legally divorce, has taken a first step towards remedying the situation.

The lower house of Philippines' Parliament last week passed a Bill to legalise divorce in the country. Representative Edcel Lagman, the Bill's author, said: "As the only country in the world besides the Vatican where divorce is still illegal, this is a clear and resounding victory and signals the imminent liberation for Filipino wives who are entombed in toxic, abusive, and long-dead marriages."

The Bill will go to the Senate in August, and will require presidential assent to become law. Lagman said its passage in the House of Representatives "signifies a significant shift in societal attitudes towards marriage and relationships".

Similar legislative attempts have failed earlier. What explains the Philippines' unique position on divorce, and what rights of separation exist for married couples at present?

### **Why is divorce not legal in the Philippines?**

It has to do with the religious composition of the population and the outsized role that religious institutions play in influencing views on social issues. According to the 2020 Census, Roman Catholics account for 78.8% of the household population, which is among the highest in the world in terms of percentage.

Muslims (6.4%) are the second-biggest group. Notably, Muslims have the right to divorce as they are governed by Sharia law in personal matters.

### **What does Catholicism in the Philippines have to do with divorce?**

For traditional Christians, specifically Catholics, marriage is seen as a sacred commitment made not just to a spouse but to God and society. Married Catholic couples may separate in some cases, but they cannot remarry in church.

Henry VIII of England (1509-47) famously broke from the Catholic Church and appointed himself Supreme Head of the Church of England after Pope Clement VII refused to allow the annulment of his marriage to Catherine of Aragon so that the king could marry Anne Boleyn.

Over the centuries the Church has relaxed its position in most parts of the world — barring the Vatican, the seat of the Pope. Countries such as Spain, Argentina, and Ireland, all with large Catholic populations, allowed divorce in the 1980s and 1990s.

The case of the Philippines is unique. Before colonisation by Spain in the 16th century, divorce was an acceptable practice in the islands. Divorce was allowed subsequently too, during parts of the American colonial period (1898-1946), and the Japanese occupation (1942-45).

In modern Philippines, however, politicians, the Church, and much of the population strongly backed a ban on divorce. Sociologist Jayeel Cornelio of Ateneo de Manila University told The



Economist in 2020 that the slight decline in the influence of Catholics over the country's politics and lawmakers had been "offset by the growing importance of various Protestant sects" who hold strong views against divorce, abortion, and same-sex marriage.

#### **So what rights of separation do Filipinos have now?**

Divorce is not allowed — but legal separation and annulment of marriage is. The former allows parties to live separately but does not end the marriage, which means neither party can marry again. In an annulment, the marriage is declared void — as though it never happened.

Grounds for separation include physical violence or grossly abusive conduct and marital infidelity; the grounds for annulment are insanity, fraud, force, intimidation at the time of wedding, etc.

These grounds have to be proven in court, and the legal remedy is costly and could take years. Women in bad marriages could continue to face domestic abuse, and their legal documents and assets may stay linked with their husbands' even after separation.

#### **What does the Bill propose?**

The Bill stipulates the grounds for "absolute divorce", which include psychological incapacity, irreconcilable differences, domestic or marital abuse, etc.

Petitioners can approach a family court, which will give a mandatory 60-day cooling-off period in certain cases, if there is scope for reconciliation. If the petition goes ahead, it must be decided within a year.

"The decree of absolute divorce shall have the effect of judicial dissolution of a marriage where the divorced spouses return to their status of being single with the right to contract marriage again," the official Philippine News Agency (PNA) reported.

#### **Could the Philippines make history, then?**

The proposed Absolute Divorce Act passed in the House 131-109 with 20 abstentions, PNA said. In the past, however, similar Bills have failed to progress beyond a point.

In 2018, after one such Bill passed the committee level at the House of Representatives, a senior Catholic clergyman said: "Divorce is a direct affront to the law ordained by God and specifically reiterated by our Lord Jesus Christ!" The Bill ultimately failed in the Senate.

This time, some local surveys have shown about half the population to be accepting of divorce — a higher percentage than earlier. Current President Bongbong Marcos has extended his qualified support to divorce. "There are cases where it (the marriage) can't really be worked out... But let's not be like other places where getting a divorce is so easy," he had said during his 2022 campaign.

### **AN OBJECTIVE VIEW IS EMERGING: MEA AFTER SHARIF SAYS PAK VIOLATED LAHORE PACT**

Days after former Pakistan Prime Minister Nawaz Sharif admitted that Islamabad had "violated" the Lahore pact, India on Thursday said an "objective view" was emerging on the issue in Pakistan.

— On Tuesday, Sharif, who has been elected as the PML(N) chief again, said Pakistan had "violated" the 1999 Lahore Declaration with India, which was signed by him and then Prime Minister Atal Bihari Vajpayee. "On May 28, 1998, Pakistan carried out five nuclear tests. After that,



Vajpayee Saheb came here and made an agreement with us. But we violated that agreement... it was our fault," Sharif said.

— Vajpayee and Sharif had signed the Lahore Declaration on February 21, 1999, after a historic summit in Lahore. The agreement, which talked about a vision of peace and stability between the two countries, signalled a breakthrough. However, a few months later, Pakistani intrusion in Kargil district of Jammu and Kashmir led to the Kargil conflict.

— In May 2014, Modi had invited Sharif, who was then the Pakistan Prime Minister, for his swearing-in ceremony. But the terror attacks in Pathankot and Uri derailed the engagement process. The ties between the two countries have nosedived, with both sides not posting High Commissioners in each other's capitals since 2019, after the abrogation of Article 370 in Jammu and Kashmir. However, the two sides have more or less adhered to the ceasefire along the Line of Control since February 2021



# DreamIAS





## NATION

### NAVEEN PATNAIK'S HEALTH AND CONSPIRACY THEORIES: NO A DEBATE FOR THE CAMPAIGN TRAIL

The question is... whether there is a conspiracy behind the deteriorating health condition of Naveen Babu." Speaking at an election rally in Mayurbhanj in Odisha, Prime Minister Narendra Modi expressed concern about Chief Minister Naveen Patnaik's health, and suggested a possible conspiracy by the "lobby that has been enjoying power from behind the scenes". He promised a special committee to look into the matter if the BJP is elected to power in the state. The PM's pitch lends his weight to a controversy that has till now remained mostly below the surface. It seems to be crossing a red line in a country where, by and large, the personal lives of political leaders, including their health issues, have been kept out of the political and electoral conversation and gaze. Of course, in times when the citizen's right to know has acquired greater salience, a case can be made for greater openness and transparency on the health of those who hold public office, or aspire to it.

In the US, the private lives of politicians are prime fodder for political opponents and the media. The broad justification for this is that the physical and mental health of those who acquire power and compete for it, and their "character", is relevant to voters making an informed choice. President Joe Biden's age and health, for example, have dominated headlines for well over a year now. Special Counsel Robert Hur called him a "well-meaning elderly man with a poor memory" in February. Hur's report exonerated Biden of charges of mishandling documents, but his assessment of Biden's mental health has arguably had a political cost. Similarly, former President Donald Trump's mental health and his fitness to be commander-in-chief, to "have a finger on the nuclear button", has been brought up by the media and his opponents. The book *The Dangerous Case of Donald Trump* (2017) compiled assessments of his mental state by 27 psychiatrists and psychologists. In the UK, the tabloid culture is rampant and often toxic. Rupert Murdoch's News International illegally tapped phones, including of politicians, for salacious stories.

India's public discourse has, by and large, been more reticent and circumspect. But the lines and boundaries that have been drawn and observed can be revisited and revised in keeping with the changing temper of the times and the reworked balance between the politicians' right to privacy and the public's right to know. This, however, is a discussion for calmer times. It cannot be had amid the electoral battle's heated to-and-fro, the floating of conspiracy theories and spectre-mongering. A careful balance needs to be struck, and care must be taken to ensure that rumour, gossip and innuendo are not given a free pass in the name of informing the public.

### USING AI AND CHATGPT IN LEGAL CASES: WHAT INDIAN COURTS HAVE SAID

The Manipur High Court last week stated that it "was compelled to do extra research through Google and ChatGPT 3.5" while deciding on a case. This is not the first time a High Court has used artificial intelligence (AI) for research. But in India — as in the rest of the world — courts have been rather cautious about the use of AI for judicial work.

#### How the Manipur HC used ChatGPT in a case



Zakir Hussain, 36, was “disengaged” from his district’s Village Defence Force (VDF) in January 2021, after an alleged criminal escaped from the police station while Hussain was on duty. He never received a copy of the order dismissing him.

After Hussain approached the Manipur High Court challenging his dismissal, Justice A Guneshwar Sharma, in December 2023, directed the police to submit an affidavit detailing the procedure for “disengagement of VDF personnel”. But the affidavit submitted was found wanting, and did not explain what the VDF was. This “compelled” the court to use ChatGPT for further research.

ChatGPT said that the VDF in Manipur comprises “volunteers from the local communities who are trained and equipped to guard their villages against various threats, including insurgent activities and ethnic violence” — information that Justice Sharma used in his ruling.

Ultimately, he set aside Hussain’s dismissal, citing a 2022 memorandum issued by the Manipur Home Department which stated that upon dismissal, VDF personnel must be given “an opportunity to explain in any case of alleged charges”— which the petitioner was denied in this case.

#### **High Courts’ differing stances on using ChatGPT**

In March 2023, Justice Anoop Chitkara of the Punjab & Haryana High Court used ChatGPT to deny the bail plea of a certain Jaswinder Singh, accused of assaulting an individual, and causing his death. Justice Chitkara found that there was an element of “cruelty” to the assault — a ground which can be used to deny bail.

To supplement his reasoning, Justice Chitkara posed a question to ChatGPT: “What is the jurisprudence on bail when the assailants are assaulted with cruelty?” The court’s eventual order contained the AI chatbot’s three page response which included that “the judge may be less inclined to grant bail or may set the bail amount very high to ensure that the defendant appears in court and does not pose a risk to public safety.”

Justice Chitkara, however, clarified that this reference to ChatGPT was not the same as expressing an opinion on the merits of the case, and that it “is only intended to present a broader picture on bail jurisprudence, where cruelty is a factor.”

The Delhi High Court has been less receptive to the use of AI in courts. In August 2023, Justice Pratibha M Singh ruled in favour of luxury shoe designer Christian Louboutin in a trademark case.

Louboutin’s lawyers had used ChatGPT-generated responses to show that the brand had a reputation for “spike shoe style” with a “red sole” — a design which was being copied by another brand called Shutiq. Justice Singh held that ChatGPT cannot be used to decide “legal or factual issues in a court of law”, highlighting the possibility of “incorrect responses, fictional case laws, imaginative data etc. generated by AI chatbots”.

#### **Elsewhere in the world**

This ‘fictional case laws’ scenario is not a mere hypothetical. In 2023, a Manhattan federal judge fined a lawyer \$5,000 for submitting fictitious legal research generated using ChatGPT. The lawyer had filed a brief with fictitious cases with titles such as Varghese vs China Southern Airlines and Shaboon vs Egypt Air in a personal injury suit involving Colombian airline Avianca.



Last December, the UK judiciary released a set of guidelines about the use of generative AI in courts. While judges were allowed to use ChatGPT for basic tasks such as summarising large bodies of text, making presentations, or composing emails, they were cautioned not to rely on AI for legal research or analysis.

No such guidelines exist in India.

## THE VACATION RED HERRING

The question of whether judges sit for 200 days or 365 is a red herring. It spins court timings and vacations to mean “this is why there are arrears”... To respond by saying that judges are overburdened and need to blow off steam in fine holiday spots while litigants languish plays into a manufactured imagery of lack of accountability or discipline amongst a pampered privileged elite.

— “High court vacancies average 30 percent but can touch nearly 50 percent. Subordinate court vacancies average 22 percent. But Bihar and Meghalaya clock in vacancies above 30 percent — ongoing for over three years.”

— “According to the India Justice Report, as of June 2020, on average, a case remained pending in the subordinate courts for three years and in high courts, at 2022 figures, for five years.”

— “Several other factors contribute to the problem, including the types and complexity of cases each judge must deal with, and the stratagems used by lawyers to prolong trials for their clients’ advantage.”

— “Courtrooms are being built, but are still in short supply and too many in use are sub-optimal. Nationally, support staff shortages average 26 percent. One court clerk or one typist missing anywhere means delay becomes inevitable, however diligent the judge.”

— “Quality deficits amplify structural inadequacies. Uneven acumen in both language and learning at the bar and the bench leads to endless procedural delays while the mismatch between proficiency of language, clarity of argument, and final outcome opens the door to ever more appeals.”

— “Meanwhile, the great hope of technology remains hostage to slow and uneven adoption, erratic electricity, uneven bandwidth, and user resistance.”

— “Excessive government litigation presently accounts for roughly 50 percent of the court load. Attempts to trim and rationalise this have been going on for a while.”

— “Judges are trained to be adjudicators, not administrators. A permanent administrative secretariat headed by a qualified court manager within each court, on whom the senior judge can rely, has proved a winner in many jurisdictions abroad.”

— “On the quality side, there is a strong case to be made for higher standards being set at the entry level before anyone can grace a bench, whether high or low, or before being allowed to practise before a court.”

— “Spending more money on justice delivery is, of course, a no-brainer but resource-strapped governments do not prioritise ramping up efficiencies in justice delivery. The India Justice Report estimates that the overall per capita spending on judiciary stands at less than Rs 150.”



— “The eye-watering five million-plus cases pending have prompted all sorts of experiments and sudden ad hoc efforts: Compulsory pre-trial mediation, Lok Adalats, specialist courts, the winnowing out of petty cases... prioritising old cases and cases where delay will bring about loss of liberty and irreparable harm to one or other party, and ever more tribunals.”

#### WHY SHARJEEL IMAM WAS GRANTED BAIL — AND WHY HE STILL WILL NOT BE RELEASED

JNU scholar Sharjeel Imam got bail on Wednesday in a case in which he is charged with sedition and unlawful activity under the stringent Unlawful Activities Prevention Act (UAPA) for an alleged inflammatory speech.

— A two-judge Bench of Justices Suresh Kumar Kait and Manoj Jain granted statutory bail to Imam after he had spent nearly four years in prison as an undertrial for an alleged inflammatory speech.

— The charges under Section 13 of the UAPA carry a maximum sentence of seven years. Sedition, under section 124A of the Indian Penal Code, carries a maximum sentence of life imprisonment. In a case involving life sentence, 10 years is considered as half the sentence for the purposes of granting statutory bail (more on that later).

— However, in a 2021 ruling, SC stayed the operation of Section 124A, which penalizes sedition. Till the constitutional validity of the provision is determined, all trials on sedition, including Imam’s, are effectively stayed..

— This is bail granted on technical grounds under the statute — hence statutory bail. Under Section 436-A of the Code of Criminal Procedure (CrPC), an accused is granted bail if he has served half of the maximum period of imprisonment prescribed for the offence.

— The provision for statutory bail was introduced in 2005 to tackle the issue of the rising population of undertrials in prison. This is especially helpful for undertrials who are booked for offences that carry a shorter sentence.

— In all bailable offences, it is mandatory for Courts to grant bail under Section 436 CrPC. An accused willing to furnish a bail bond has to be granted bail in such cases. In case of non-bailable offences, it is the Court’s discretion to grant bail.

#### DEMONISING PROTESTS

A perverse combination of statutory restrictions and judicial deference has kept former university scholar Umar Khalid in prison for over three years. In yet another order denying him bail, a Sessions Court in Delhi declined to change its mind on earlier findings that the charge that he was part of a “larger conspiracy” behind the north-east Delhi riots of 2020 was prima facie true. It declined to countenance the argument that the trial proceedings were being delayed far too long and that a July 2023 judgment on grant of bail in cases under the Unlawful Activities (Prevention) Act (UAPA) could support his petition for bail. The court, instead, banked on earlier orders denying him bail, especially the Delhi High Court’s 2022 verdict that agreed with the Delhi Police claim that the riots were “orchestrated at conspiratorial meetings”, even though there is nothing more than WhatsApp chats on organising road blockades to substantiate it. Bail hearings have been interminably long in Mr. Khalid’s case, and inevitably end in rejections. In fact, before the Supreme Court, his bail application was listed over a dozen times, and repeatedly adjourned. He chose to withdraw the application in February 2024 and try his luck before the lower courts again. However, the Sessions Court did not see any reason to change its view.

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



The outcome is quite unfortunate, as while granting bail in 2021 to three other activists implicated in the Delhi riots case, the Delhi High Court had looked at the available evidence and ruled that none of them had been specifically accused of any 'terrorist' act or plot or act preparatory to it. It had remarked that the state, in its anxiety to suppress dissent, had blurred the line between the constitutionally guaranteed right to protest and terrorist activity. The attempt to conflate the organisation of the protests against the amendment to the citizenship law with the riots resulted in the police invoking UAPA without justification. The UAPA bars the grant of bail if the court is of the view that the allegations against a suspect are prima facie true. To compound the difficulty, judicial decisions prohibit any detailed scrutiny of the evidence at the bail stage, and mandate accepting the prosecution case based on its "broad probabilities". This low standard enables the police to repeatedly achieve success in opposing bail to dissenters and the disfavoured. Umar Khalid's continued and unjust incarceration represents a trend as well as an aberration in the criminal justice system. A system that sometimes bats for personal liberty also demonises protesters, allows unwanted arrests and routinely denies bail or indefinitely postpones bail hearings.

### 'POTENCY TEST' FOR PRAJWAL REVANNA: IS THIS EVEN RELEVANT FOR SEXUAL ASSAULT CASES?

Janata Dal (Secular) MP Prajwal Revanna, who returned to Bengaluru from Germany on Friday, has been taken into custody by a Special Investigation Team (SIT). The SIT which is investigating sexual assault allegations against Prajwal is likely to have him take medical tests, including a potency test.

#### **What is a potency test?**

A potency test is conducted to examine whether a male has the capacity to develop or maintain a penile erection to be able to perform a sexual act. This medical 'evidence' is brought in cases involving sexual assault, divorce, and even in paternity suits. In divorce and paternity cases, a fertility test along with a potency test is commonly done.

Section 53 of the Code of Criminal Procedure (CrPC) allows examination of "blood, blood-stains, semen, swabs in case of sexual offences, sputum and sweat, hair samples and finger nail clipping by the use of modern and scientific techniques including DNA profiling and such other tests which the registered medical practitioner thinks necessary in a particular case", on the accused for investigation.

#### **Why is the test relevant in sexual assault cases?**

In sexual assault cases, the prosecution brings a potency test report to the court to counter any potential defence from the accused that he is incapable of sexual intercourse. Such a defence, however, is far from foolproof.

Potency is not permanent, and can vary depending on several physiological and psychological factors. Just because a man is unable to develop or sustain an erection at the time of the test, does not mean that he cannot do so at other times.

Thus, reports submitted in court simply indicate whether the accused is capable of sexual intercourse or not at the time of the test, and only have corroborative value.



This is similar to the ‘two-finger’ test done for the prosecutrix to determine the laxity of the hymen, that is, whether a woman is habituated to sex. It is also not determinative of whether a forced sexual intercourse has occurred. While this test is still commonly used, it is not considered to be strong evidence.

In fact, in a sexual assault case, it is only the statement of the survivor that is treated as complete evidence.

Moreover, even if potency tests had some sort of relevance before 2013, a change in the law has now made them even less relevant. Prior to 2013, Section 375 of the Indian Penal Code (IPC) that defined rape was limited to a peno-vaginal intercourse. Intercourse would often be the benchmark to determine if the offence involved rape or a lesser crime. However, after the 2013 criminal law amendments, the definition of rape was expanded.

Now, under the law, rape includes penetration of “any object”, “mouth” to “any part of body” of a woman. A non-peno-vaginal contact does not necessarily need a test of potency at all.

#### DECODE POLITICS: IN SC/ST QUOTA DEBATE, MODI NOW ATTACKS NEHRU. WHAT WAS FORMER PM’S STAND?

With his remarks on reservations at a rally in Bihar on Tuesday, Prime Minister Narendra Modi has opened up another front on the issue. “The truth is that had there been no Ambedkar, Nehru would not have allowed quota for SC/STs,” he said, while going on to allege that the Opposition INDIA bloc wanted to change the Constitution and extend reservations to religious minorities.

A look at the Constituent Assembly debates over giving Constitutional status to reservations:

##### **What was the initial provision for reservations?**

The Constitution, when it first came into force, included provisions to provide reservations in political institutions and public employment for people belonging to Scheduled Castes and Scheduled Tribes.

What is now Article 16 of the Constitution – which allows states to reserve appointments to state services for “any backward class of citizens which... are not adequately represented” – was initially known as “draft Article 10”, when the members of the Constituent Assembly debated it on November 30, 1948.

The phrase “any backward class” in the draft version (and eventually the final version) was a hotly contested subject. Many members believed the phrase to be too vague as the term “backward class” was not defined anywhere else in the Constitution.

##### **What were the Constituent Assembly members’ views?**

Members including the Congress’s Chandrika Ram and Dharam Prakash, one of the first Dalit lawyers in the country and a future Rajya Sabha MP from Uttar Pradesh, respectively, advocated to explicitly include the term “Scheduled Caste” in the place of (or in addition to) the term “backward class” to clarify which groups of people could avail the benefits of reservations.

On the other hand, members such as Lokanath Misra and Damodar Swarup Seth, who were also part of the Congress, sought deletion of the reservations provided for “backward classes”. Misra, addressing the Assembly, stated: “Everybody has a right to employment, food, clothing, shelter



and all those things, but it is not a fundamental right for any citizen to claim a portion of state employment, which ought to go by merit alone. It can never be a fundamental right.”

**What was B R Ambedkar’s opinion?**

Addressing the debate around the word “backward”, Ambedkar acknowledged that it is a “generic principle”. However, to ensure that equality of opportunity was provided to all citizens in the matter of public employment, he argued that the word “backward” was a necessary qualifier to make sure that the “exception” of reservations provided to oppressed communities did not “eat up” the right to equality of opportunity altogether. As for the specific question “What is a backward community?”, he said that this would be determined by each local or state government.

**What was Nehru’s view on reservations?**

While Nehru did not contribute to the debate in the Constituent Assembly on Articles related to reservations, after he became the PM, he wrote a letter in June 1961 to chief ministers, where he emphasised the need for empowering backward groups by giving them access to good education and not by reserving jobs based on caste and creed.

“It is true that we are tied up with certain rules and conventions about helping SCs and STs. They deserve help, but even so, I dislike any kind of reservation, more particularly in service... The only real way to help a backward group is to give opportunities for good education. This includes technical education, which is becoming more and more important. Everything else is provision of some kind of crutches which do not add to the strength or health of the body,” he wrote.

In the letter, he went on to say that reservations on communal and caste basis “swamp the bright and able people while the society remains second-rate or third-rate”. “I am grieved to learn of how far this business of reservation has gone based on communal consideration,” he added.

**What does the Constitution say on quota in legislatures?**

The Constitution introduced reservations for SCs and STs in the Lok Sabha and state Assemblies under Articles 330 and 332 respectively.

Some members of the Constituent Assembly, including Brajeshwar Prasad and H J Khandekar, argued that reservations were an inadequate measure and would not result in any progress for oppressed communities. Prasad believed that the nominal representation of SCs and STs would not result in economic and educational upliftment, stating that the few leaders that are elected will “raise a terrible hue and cry but nothing substantial will be achieved”.

Objections were also raised regarding the 10-year time limit for reservations under Article 334 (draft Article 295-A). Under the Constitution initially, the provisions for reservation in the Lok Sabha and Assemblies were meant to expire after 10 years, and a large host of members expressed doubts that any sort of quality could be reached within such a short time limit.

Independent member and tribal rights activist Jaipail Singh for instance, said, “I regret it is there only for ten years, because I am convinced that India is not going to become heaven, that everybody is not going to become a graduate in ten years or that everybody will get politically educated.”



### What is the current status of the provision?

These Articles were eventually adopted with few changes despite a heated debate in the Constituent Assembly. However, Article 334 has been the subject of a host of Constitutional amendments, where the 10-year limit has been extended by an additional 10 years each time. Most recently, in 2020, following the Constitution (104th) Amendment Act, the time limit for SC and ST reservations in legislatures was extended till 2030. These repeated extensions are now the subject of a pending challenge before a Constitution Bench of the Supreme Court.

## 2004 LOK SABHA ELECTIONS: WHEN BJP'S 'INDIA SHINING' FAILED TO RESONATE, LEADING TO THE UPA ERA

From a pre-recorded telephonic message by the Prime Minister himself — “Main Atal Bihari Vajpayee bol raha hoon...(This is Atal Bihari Vajpayee speaking)” — to a blitz “India Shining” campaign that screamed from the billboards about the success of India’s urban growth story — the BJP was certain of tasting victory in the 2004 general elections.

And the party had good reason to feel upbeat about its chances: the economy was growing at an impressive rate (the gross domestic product growth rate was 8.4% in the second quarter of 2003), Vajpayee’s popularity was at an all-time high, India’s foreign reserves were swelling and the Opposition was crumbling (the Congress had lost the Assembly polls in Rajasthan, Madhya Pradesh and Chhattisgarh in 2003). Certain of a hat-trick, Vajpayee dissolved the Lok Sabha on February 6, 2004, six months before the term of the House ended (the polls were originally due in September-October 2004).

The “feel-good factor” the BJP was banking on after its “India Shining” campaign led to a windfall for the Congress and kept the right-wing party out of power for a decade. Vajpayee was replaced by Manmohan Singh as the new Prime Minister. A “technocrat” Finance Minister in the P V Narasimha Rao Cabinet, Singh would head the Congress-led United Progressive Alliance for 10 years.

### Changes before the polls

In 2000, the National Democratic Alliance (NDA)-II government had created three new states — Uttaranchal (later renamed Uttarakhand, by dividing Uttar Pradesh), Jharkhand (from Bihar) and Chhattisgarh (from Madhya Pradesh).

Many schemes were launched under Vajpayee, including the Pradhan Mantri Gram Sadak Yojana (PMGSY), the Golden Quadrilateral, a national highway network connecting Delhi, Kolkata, Mumbai and Chennai, and the north-south corridor of national highways. Home loans were made cheaper, besides efforts to resolve India-Pakistan disputes, particularly on Kashmir.

However, these initiatives were overshadowed by the 2001 UTI scam, the discontinuation of the old-age pension scheme in 2003 and the initiation of contractual jobs, also in 2003, and other decisions — above all, the annoyance among BJP-Rashtriya Swayamsevak Sangh (RSS) cadres. Visible cracks had started to surface between BJP and its ideological fountainhead, the RSS. Allegedly annoyed with the government policies, RSS sarsanghchala (chief) K S Sudarshan attacked Vajpayee’s Principal Secretary Brijesh Mishra in March 2001 saying, “There are some incompetent people sitting in the PMO (Prime Minister’s Office).”





Brimming with overconfidence, BJP leaders were completely disconnected with ground realities. Though the party did come out with 'the NDA Agenda for Development, Good Governance and Peace' with the "overarching goal of becoming a Developed Nation by 2020", nothing worked in its favour. In fact, Advani acknowledged in his autobiography that BJP's 2004 election slogans "gave an opportunity to our political opponents to highlight other aspects of India's contemporary reality — poverty and uneven development, unemployment among the youth, problems faced by farmers, etc., which questioned our claim".

Advani's Bharat Uday Yatra, launched on March 10, 2004, received a tepid response. With everything seemingly falling apart, veterans like Kalyan Singh, who had quit the BJP in 1999 following a spat with Vajpayee, were re-inducted in February 2004 as a last-ditch attempt to revive the party's prospects. And yet, the BJP was handed a crushing mandate. In Uttar Pradesh, the party was reduced to 10 seats from 29 in the previous election.

#### **First election with only EVMs, mandatory candidate declarations**

The 2004 elections saw two historic electoral reforms. First, electronic voting machines (EVMs) replaced the paper ballot. Second, the Supreme Court made it compulsory for candidates to declare their complete assets and liabilities while filing their nomination papers.

EVMs had been used experimentally in Paravur Assembly segment in Kerala in 1982. To facilitate their use, the Representation of People Act was amended in 1989. This election 2004 saw the entire country switch over to EVMs. On March 13, 2003, a Supreme Court judgment made it mandatory for electoral hopefuls to file along with their nomination papers an affidavit declaring "information about their criminal background, assets, liabilities and educational qualifications". The affidavit was to include information on the assets and liabilities of their dependents too. The Supreme Court had said that getting to know all this information was part of a voter's "right to know".

Meanwhile, the report of the Delimitation Commission, headed by retired Supreme Court judge, Justice Kuldeep Singh, would be implemented during the 2009 general elections.

#### **Voting and counting**

A four-phase election was held between April 20 and May 10, 2004, while counting started on May 13. Of 67.14 crore voters, 32.19 crore were women and the total turnout was 58.07%. A total of 5,435 candidates were in the fray, including 355 women (45 of these women won). The maximum number of candidates — 35 — fought from the Madras South seat, which was won by Dravida Munnetra Kazhagam's (DMK) T R Baalu.

The results revealed that the BJP's seat-share had been reduced to just 138 from 182 in 1999 (NDA won 181 seats this time against the 303 earlier). The Congress 145, Communist Party of India (Marxist) won 43, Samajwadi Party 35, Bahujan Samaj Party (BSP) 19, CPI 10 and Nationalist Congress Party (NCP) nine. Rahul Gandhi made his debut with this Lok Sabha poll. While he contested from Amethi, his mother Sonia fought from Rae Bareli. Both won from their respective seats.

On February 6, 2004, a day before the 13th Lok Sabha was dissolved, many BJP MPs appeared confident about their alliance being voted back to power. However, the results were exactly the opposite. It was later said that Vajpayee had been against early polls, but gave in to the counsel of



his colleagues, including L K Advani and then BJP chief M Venkaiah Naidu. Their judgement was perhaps clouded by the party's victories in Assembly polls.

### **Manmohan leads UPA**

Though its tally was hardly better than the BJP — just seven more seats — the Sonia Gandhi-led Congress moved heaven and earth to form the next government. The timing worked in the party's favour since it had realised the hard way the value of political alliances.

Left parties played a key role in the formation of the United Progressive Alliance (UPA) government, which comprised over a dozen parties. Due to her past experience — the issue of her foreign origins muddying the waters in 1999 — Sonia put her ambitions aside and gave the alliance's reins to Manmohan, the economist responsible for bringing liberalisation to India in 1991.

With Sonia as the chairperson of UPA, he took oath as Prime Minister on May 22, 2004. Besides the National Common Minimum Programme (NCMP), framed to ensure the smooth functioning of the alliance, Left parties had a big influence on this government, particularly in the education sector. CPI (M)'s Somnath Chatterjee was elected as the Speaker, though his party was just supporting the alliance from outside.

To give Sonia a rank equal to that of a Cabinet minister, Manmohan appointed her as the chairperson of the National Advisory Council (NAC), created on June 3, 2004. Though she resigned from the post on March 23, 2006, after the issue of office of profit was raised against her, the NAC continued to exist. For coordination among UPA partners, frequent meetings were held to assure the alliance's smaller constituents that their role remained crucial to the coalition.

### **UPA government's reform-oriented programmes**

Manmohan initiated several reforms, including the Right To Information Act in 2005 (Vajpayee government had passed the Freedom of Information Act but could not implement it), the National Rural Health Mission (NRHM), the Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA) and the Right to Education Act in 2009. The alliance also continued some of Vajpayee's schemes, including that on national highways.

Meanwhile, Arjun Singh, the Minister of Human Resource Development (now Education), fought within and outside his party, forcing the government to finally implement the 27% reservation for Other Backward Classes (OBCs) in admissions to higher educational institutions in 2009. The government also issued instructions to various departments to make their policies inclusive. Even the Department of Public Enterprises was advised to take care of representation of marginalised communities while forming panels for various posts.

### **Nuclear deal with US, a problems for CPI(M)**

A nuclear deal with the United States in July 2008 created problems for the UPA since Left parties supporting the alliance were against it. After the CPI (M) withdrew its support to the alliance on July 9, 2008, the government called a special Parliament session on July 21-22, 2008, to discuss the deal. Though the CPI(M) asked Chatterjee to resign as Speaker — in line with the party's decision — the 10-term MP refused. Expelled from the CPI(M) on July 23, Chatterjee continued as the Speaker till the Lok Sabha's term ended in 2009.



Voting on the confidence motion after the withdrawal of CPI(M)'s support to UPA over the nuclear deal was so crucial that an ailing Vajpayee, then an MP from Lucknow, was brought in on a wheelchair. The voting ended in UPA's favour: 275 ayes and 256 noes.

### **Fight in BJP for leadership starts**

The 2004 poll results brought many setbacks for the BJP in the years to come. Naidu had to resign as party chief after the results and Advani was forced to take charge of the BJP once again. In April 2005, then RSS chief Sudarshan remarked that "age is a factor. L K Advani and A B Vajpayee should step aside and see a younger leadership emerge".

A major controversy erupted within the sangh parivar after Advani's June 2005 visit to Pakistan. During his visit, the BJP elder praised Pakistan's founder Muhammad Ali Jinnah, besides calling him a "secular" person and visiting his mazaar (tomb). Advani's praise for Jinnah nearly cost him his post of the BJP president, but he rescinded his resignation. At the party's Mumbai meeting in December 2005, Advani finally resigned as party president and was replaced by Rajnath Singh, the former Chief Minister of Uttar Pradesh. However, Advani continued as the Leader of Opposition in the 14th Lok Sabha.

In May 2006, Pramod Mahajan, BJP's rising star and possibly even the party's future prime ministerial candidate, was shot dead by his own brother. While 85-year-old Vajpayee, a Lok Sabha member till 2009, decided not to fight the 2009 polls on account of his deteriorating health, 81-year-old Advani's ambitions saw him contest the next Lok Sabha elections, held in April-May 2009, as its prime ministerial candidate.

## **PDA, BAAP, OTHERS: SHORT HISTORY OF PARTIES, THEIR SOCIAL COALITIONS**

As counting day nears, in UP and Bihar, which together send 120 members to Lok Sabha, opposition leaders Akhilesh Yadav and Tejashwi Yadav will be hoping that the social alliances they tried to build during the election campaign — PDA and BAAP respectively — turn out to be more than just catchy acronyms.

In a large and diverse country, politics has long been the art of bringing together various groups of people in a social coalition that can take a party first past the post. This has been true of this election and earlier ones; in the Hindi heartland and elsewhere in North India.

**AKHILESH'S PDA:** The challenge before Akhilesh Yadav for the Lok Sabha election was to take the Samajwadi Party (SP) base beyond just the Muslim-Yadav (MY) combination that Mulayam Singh built. He attempted therefore, to build a coalition of Pichhda (backwards), Dalit, and Alpsankhyak (Muslims), or PDA.

The SP, which is contesting on 62 seats across the state, has given tickets to only five Yadavs, all of whom belong to Mulayam's Saifai clan. It has fielded 10 Kurmis (Patels), six Kushwaha-Maurya-Shakya-Saini candidates, three Nishads (boatmen), four Brahmins, and one Pal.

In the middle of the campaign, Akhilesh appointed Shyamlal Pal, an OBC shepherd leader, as the SP's UP president.

This social engineering was intended to blunt the BJP's criticism of the SP as a Yadav-Muslim party, and one that is controlled only by the family of Mulayam Singh. The BJP has gained in UP in recent years from the support of the smaller non-Yadav OBC castes, and the SP's ticket distribution is



aimed at denting the party's base among the Kurmis, Kushwahas-Mauryas-Shakyas-Sainis, Pals, and a section of SCs.

With the BSP weakening, both the BJP and SP are also eyeing the Dalit vote. The BJP has been trying to make inroads into the BSP's Jatav constituency, in addition to its earlier focus on Pasis, the other large block among the Scheduled Castes.

The SP on its part has fielded SC candidates even on some general seats such as Ayodhya and Meerut. Its candidate in Ayodhya, Awadhesh Prasad, is a popular multiple-term MLA from the Pasi community, and its Meerut nominee, Sunita Verma, is a Jatav.

**TEJASHWI'S BAAP:** Like Mayawati's base in UP, Nitish Kumar's support among certain OBCs in Bihar is up for grabs. Like Mulayam in UP, Lalu Prasad's core support in Bihar was MY, which the RJD founder's young son has sought to expand to an umbrella MY-BAAP, which includes Bahujan (Dalits), Agda (forward castes), Aadhi Aabaadi (women), and Pichhda (backwards) or Poor.

The attempts to consolidate backward-caste votes in UP and Bihar go back further than Mandal and leaders like Mulayam and Lalu. In the 1960s, as parties like the Samyukt Socialist Party (SSP) sought reservation for the backward farming and artisanal communities, Dr Ram Manohar Lohia gave the call of "Pichhde Paawein Sau Mein Saath" (OBCs must get 60%).

The slogan had an impact, and in 1967, the SSP won 44 of the 425 seats in the UP Assembly, while the Bharatiya Jana Sangh (BJS), the precursor of the BJP, got 99. In Bihar, the SSP got 68 of 271 seats, and the BJS won 26. Among the BJS winners in both states were a large number of OBCs.

**AJGAR:** Lohia passed away months after the 1967 election, but his campaign produced a new set of non-Congress leaders. In UP, the Jat leader Chaudhary Charan Singh formed the government and later, his own party. Charan Singh built a social coalition that became famous as AJGAR, or Ahir-Jat-Gujjar-Rajput, the castes that constituted the support base of the farmer leader Sir Chhotu Ram in the years before Independence.

Charan Singh, who had focused on building a base among rural populations and farmers even when he was in the Congress before 1967, was popular among non-Jat castes as well. The rebellion of V P Singh against Rajiv Gandhi led to the horizontal expansion of the AJGAR block across North India. OBCs and Rajputs collaborated to weaken and unseat the Congress in North India.

In the years after 1989, Mulayam and Lalu built potent MY coalitions, emerging as leaders of Muslims in their respective states, and positioning themselves aggressively against the forward castes. In Lalu's strongest period in Bihar, the RJD gave the provocative slogan "Bhura Baal Saaf Karo", meaning remove Bhumihars, Rajputs, Brahmins, and Lals (as Kayasthas are known in Bihar).

**KANSHI RAM'S DS-4:** In 1981, Kanshi Ram formed the Dalit Shoshit Samaj Sangharsh Samiti, or DS-4 to initially rally all deprived communities. His famous slogan was "Brahmin, Thakur, Bania chhor, baki sab hain DS-4 (barring Brahmins, Rajputs, and Vaishyas, all others are DS-4)".

Kanshi Ram later identified his social base as Bahujan, formed the Bahujan Samaj Party (BSP), and vehemently attacked the upper castes. For some time in 1993, Kanshi Ram formed an alliance with Mulayam Singh's SP, which flagged to parties like the BJP the imperative to promote leaders of OBCs other than Yadavs, and SCs other than Mayawati's Jatav community.



Mayawati subsequently inducted advocate Satish Mishra and gave him a prominent role in the party.

This was part of reaching out to Brahmins, the group that the BSP had long targeted. Mayawati started identifying with Sarv Samaj and Sarvjan (all peoples), and the BSP won a majority on its own in UP in 2007.

#### PARTIES CHOOSE MIDDLE-AGED TO OLDER MEN TO FIGHT 2024 POLLS

In the ongoing elections to the Lok Sabha, a majority of the candidates across political parties are middle-aged or older men, shows an analysis of data by the Association for Democratic Reforms (ADR). This was seen in previous elections too.

The Bahujan Samaj Party (BSP), the Bharatiya Janata Party (BJP), and the Congress have fielded the highest number of candidates this election. While the BSP has fielded 486 candidates, the BJP has fielded 440, and the Congress 327. Of them, only 2% of the BJP's candidates, 7% of the Congress's candidates, and about 13% of the BSP's candidates are aged 25-35 years.

Also, only 16% of the BJP's candidates, 13% of the Congress's candidates, and 8% of the BSP's candidates are women. Overall, including all the political parties and independents, of the 8,337 candidates who are fighting the elections, about 10% (797) are women.

While no party has fielded more than 40% women candidates, some have come close or even exceeded the 33.3% mark, which the Women's Reservation Bill promises. The Samajwadi Party (with 20% of its candidates being women), the All India Trinamool Congress (25%), the Biju Janata Dal, (33.3%) and the Rashtriya Janata Dal (29%) stand out among the parties which have fielded a considerable number of candidates. The All India Anna Dravida Munnetra Kazhagam (3%) and the Communist Party of India (7%) are among the parties which have fielded a considerable number of candidates. The share of women is relatively low among them, however.

According to ADR data, none of the parties have fielded a third-gender candidate. Among independents, just two candidates — Sunaina Kinnar from Dhanbad and Durga Mousi from Damoh — were recorded as third-gender candidates fighting this election.

Some parties have relied on younger candidates quite heavily this election; a closer look shows an interesting pattern. Parties such as the Viduthalai Chiruthaigal Katchi (VCK), the All India Majlis-E-Ittehadul Muslimeen, the Rashtriya Samaj Paksha, the Bharat Adivasi Party, the Republican Party of India (Athawale), and the Revolutionary Socialist Party have given a relatively high share of tickets to the youth.

All these parties have fielded these candidates in places far away from their sphere of influence. For instance, the VCK, which stands a good chance of winning two seats in Tamil Nadu, has fielded its leader, Thol Thirumaavalavan, and D. Ravikumar — both aged above 60 — in those seats. The average age of its candidates in the 11 other seats in other States, where its winning chances are extremely poor, sharply drops to 40.

About 55% of the BJP's candidates are above 55 years of age, while the figure for the Congress is 47%. In the Bharat Rashtra Samithi, 71% are aged above 55, in the Shiromani Akali Dal, 69% are aged above 55, and in the Janata Dal (United), the figure is 75%.



## ANDHRA AND TELANGANA HAVE MANY OF INDIA'S RICHEST MP CANDIDATES

The political parties in Andhra Pradesh and Telangana have fielded some of the richest politicians in the 2024 Lok Sabha elections. These are the two States where the worth of the average assets of candidates in the fray is the highest. This is mainly due to the relatively rich candidates who have been fielded by the Telugu Desam Party (TDP), the Bharat Rashtra Samithi (BRS), and the Jana Sena Party (JSP). The TDP features first on the list of the top 10 parties with the highest average assets of candidates; the JSP and BRS feature third and fourth. The Yuvajana Sramika Rythu Congress Party (YSRCP) is eighth on the list.

Chandra Sekhar Pemmasani of the TDP, who is competing for the Guntur seat, is the richest in the fray with assets worth ₹5,706 crore. The TDP's poorest candidate declared assets worth ₹3 crore. Apart from the regional parties, even the candidates of national parties who were fielded from these States are relatively rich. The second richest in the fray, with assets worth ₹4,568 crore, is the BJP's Konda Vishweshwar Reddy, who is competing from the Chevella seat in Telangana. The Congress candidate from Chevella, Gaddam Ranjith Reddy, with assets worth ₹436 crore, is also among the richest. Many other relatively rich candidates such as the BJP's C.M. Ramesh (₹498 crore); the Congress' Y.S. Sharmila Reddy (₹182 crore); the TDP's Prabhakar Reddy Vemireddy (₹716 crore) and Sriharat Mathukumili (₹299 crore); the BRS' Kasani Gyaneshwar Kasani (₹228 crore), Nama Nageshwara Rao (₹156 crore), and Kyama Mallesh (₹145 crore); and the YSRCP's Chalamalasetty Sunil (₹150 crore) and Simhadri Chandra Sekhar Rao (₹139 crore) are also competing from these two States. Chart 1 shows the candidate-wise average assets in ₹ crore.

As noted earlier, the TDP is on top of the list in terms of average assets of candidates (with its candidates having average assets of ₹416 crore) followed by the Janata Dal (Secular) (₹94 crore), the JSP (₹82 crore), and the BRS (₹54 crore). The BJP features seventh on the list with its candidates having average assets of ₹41 crore behind the two parties which split from the Nationalist Congress Party. The parties from Tamil Nadu — the AIADMK and the DMK — feature ninth and tenth, respectively. Congress candidates feature 14th on the list with average assets of ₹25 crore. The Jammu and Kashmir Peoples Democratic Party headed by Mehabooba Mufti (₹1.4 crore), the CPI(M) (₹1.4 crore), and the BSP (₹2.6 crore) are at the bottom of the list.

Candidates in Andhra Pradesh and Telangana have average assets of ₹21 crore and ₹14 crore, respectively — the highest. Haryana, Himachal Pradesh, and Karnataka were the other States in the top five. Chhattisgarh (₹1.3 crore), J&K U.T. (₹2 crore) and Kerala (₹2.3 crore) are at the bottom of the list.

Notably, the BJP's poorest candidate is Rekha Patra. She is one of the women who spearheaded the Sandeshkhali movement against Trinamool leaders. She declared assets worth ₹25,000. While all the parties couldn't be depicted, an analysis including all candidates and independents showed that as many as 46 candidates, mostly independents, declared that they did not have any assets.

## POLL SCORCHER

India's 2024 Lok Sabha election will involve over 96.88 crore registered voters, and the election, when it is over, would have spanned over 43 days, with an estimated 1.5 crore polling staff engaged in the process. Security personnel drafted for the purpose are over and above this.

Without doubt, this is the world's largest democratic exercise, with the voting population much more than the combined population of the U.S., and the European Union. From Kanniyakumari in



the deep south to the Kashmir Valley in the Himalayas and from Manipur in the east to the Thar desert in Rajasthan, this election is expected to be the world's most expensive.

Cut to the voting itself, where long-winding queues would be no less than a scene at a first day, first show of a blockbuster movie, but add to it, the searing Indian summer. It takes immense commitment to stand for hours, or walk long distances in the heat, and sometimes in the odd summer shower to cast your vote. The urban voter did not show up with as much enthusiasm as the rural and semi-urban voter. While voting began as early as 7 a.m., most booths saw a small crowd ready to do their part in the electoral process. Crowds slacked around noon, again picked up speed towards the evening. At places where EVMs encountered snags, or there were power cuts, people stayed put.

Reports from Andhra Pradesh and Kerala showed the voting went on till almost midnight. The electors of Delhi cast their votes while enduring the summer heat on Saturday with some voters even fainting due to the blazing sun and hot winds sweeping the national capital even as poll authorities made arrangements to beat the heat. The capital was under an "orange alert" on the polling day with the maximum temperature being recorded at 43.4 degrees Celsius, 3.2 notches above the season's average, according to the India Meteorological Department. A 70-year-old woman fainted at a polling booth in the West Delhi constituency after casting her vote. She was assisted by the volunteers and taken to the hospital.

The Election Commission of India had sent out a heat advisory to all State electoral officers a month before the polls started on April 19. The advisory followed the India Meteorological Centre's forecast of above normal temperatures during the summer, predicting stronger and longer spells of heatwaves, especially during March to June. Drinking water and oral rehydration salts were made available in polling booths. Shaded areas were set up at each polling station and the waiting areas fully covered.

Street vendors saw brisk business on the polling days, offering sugarcane juice, coconut water and buttermilk to thirsty customers who wanted to cool off after they had exercised their franchise.

The final phase of election will be held on June 1 and vote counting on June 4.

## ABSOLUTE NUMBERS

A total of 58 Lok Sabha seats in eight States and Union Territories voted on Saturday in the sixth and penultimate phase of the general election 2024. With this, polling has been completed in 28 States and Union Territories, in 486 constituencies. Voting is also over for 105 Assembly constituencies of Odisha. The last phase of polling will be on June 1 for the remaining 57 seats and counting of votes will take place on June 4. Sporadic incidents of violence were reported from West Bengal which also reported the highest polling percentage at 79.47. In Jammu and Kashmir, the Anantnag-Rajouri seat recorded a turnout of 54.30%, an impressive high. Urban apathy continued in the seven seats of Delhi which went to the polls with just 57.67% of the electorate turning out to vote. The searing heat wave prevailing in north India did not help matters. The Election Commission of India (ECI) released, for the first time in this general election, the absolute number of votes cast in each constituency for the first five phases. The ECI came out with the data a day after the Supreme Court of India refused to direct the commission to disclose details of Form 17 C, which contains this data at the booth level and is handed out to all the polling agents of the candidates.



The ECI has alleged, inappropriately, there to be a “pattern of false narratives and mischievous design to vitiate electoral process”. It is true that concerns have been raised by several actors about the electoral process, and it is possible that a part of it could be due to ignorance or even out of mischief. A mature and appropriate response expected of the body that is tasked with overseeing the largest democratic exercise on the planet is to provide information to the public that removes such concerns. The commission opposed the disclosure of Form 17C in the Supreme Court — all the while insinuating at a conspiracy to vitiate the electoral process. Complaints brought to its attention by anyone should be addressed in a manner that behoves a robust democracy. It is indeed the duty of the ECI to ensure that the electoral process is not vitiated, and the best way to achieve it is to ensure the maximum transparency that is administratively possible. The ECI has done well by publishing the data on the absolute number of voters, and it could proactively look for more measures that could reinforce public faith in the process and in its own integrity.

## TURNOUT CONUNDRUM

With just one phase left in the general election 2024, a stocktaking exercise on voter participation across the country reveals a significant dampening in turnout in this set of elections in comparison to the 2019 and even the 2014 general elections. There are State and regional level variations — voters in the east, northeast and many in the south typically voted higher than those in west, central and north India. Yet, barring some exceptions such as Telangana and Karnataka, where voter turnout registered a small increase from 62.8% to 65.7% and 68.8% to 70.6% among others, there has been a general decline in voting across States in 2024. As an analysis in The Hindu revealed, not only was there a dip in turnout in percentage terms, but there was also a decline in voter turnout in absolute terms in 132 of the 485 constituencies that went to polls in the first six phases. The high number of seats that encountered a dip in voter participation is unprecedented since the latest delimitation that was conducted prior to the 2009 general election. A closer look at the numbers shows that there was a significant bump in the total electorate (eligible voters above the age of 18 years) in 2014, and slight increases in 2019 and 2024. But it was only in 2024 that voter turnout dropped dramatically in many constituencies.

This drop in turnout can possibly be explained by political factors. Was there lower enthusiasm to vote in States which did not feature a strong contest among the parties in the fray? Does this explain the relatively low turnout in Gujarat (60.1%, a 4.4 point drop from 2019), where the Bharatiya Janata Party is in a dominant position or Kerala (71.3%, 6.6 point drop) where both the main rivals, the Left and the Congress along with their allies, are part of the INDIA bloc nationally? Has inter-State migration been a factor which possibly explains the low turnout in the northern and central States? Bihar, for example, has seen a significant gender gap, with women voters far outnumbering men in participation in percentage terms. Have the heatwave conditions contributed to electors deciding to stay at home? These are questions that deserve a closer look at data and the Election Commission of India must play a role in answering some of them. India has always enjoyed a higher degree of participation relative to other electoral democracies and a significant drop, as seen this year, is cause for concern. Voter apathy over the longer term can undermine the democratic process itself. People get the government they deserve when they vote, and the government they do not deserve when they do not vote.





## OPERATION BLUE STAR, THEFT OF HOLY BOOK: WHY JUNE 1 IS AN IMPORTANT DATE IN PUNJAB POLITICS

June 1, the day Punjab votes in the last phase of the Lok Sabha election, happens to be the anniversary of two pivotal events that have influenced the recent history and politics of the state. Both events have featured in the campaign — either as part of direct reminders to electors, or as echoes or references in speeches delivered by certain candidates.

June 1 will be the 40th anniversary of the beginning of Operation Blue Star, the Indian Army operation to flush out Khalistani militants from the Golden Temple in Amritsar. The assault on the holiest shrine of the Sikhs triggered a chain of bloody events including the assassination of India's Prime Minister, and unprecedented organised violence against members of the community in Delhi and other places.

Years later, on another June 1, a copy of the Guru Granth Sahib (saroop), considered the living Guru of the Sikhs, was stolen from a gurdwara in Faridkot, leading to a series of sacrilegious incidents that have had a profound impact on Punjab politics.

### **June 1, 1984: Op Blue Star**

Despite objections from various quarters including Cabinet Minister Pranab Mukherjee, Indira Gandhi authorised the military action at the Golden Temple in mid-May, 1984. By May 29, troops from the 9th Infantry Division in Meerut had arrived in Amritsar, supported by Para commandos. Their mission was to flush out militant ideologue Jarnail Singh Bhindranwale and his followers who had set up base in the temple.

On June 1, an exchange of fire between militants and CRPF personnel who had taken up positions atop private buildings near the temple resulted in the deaths of 11 civilians. Operation Blue Star lasted until June 10, and took a heavy toll on life, property, and emotions. The Akal Takht, the temporal seat of the Sikhs, was destroyed in the operation.

Army reports listed 554 deaths, including those of four officers and 79 soldiers, but actual casualties were likely much higher, with many pilgrims among the victims. Bhindranwale was killed in the operation.

**FALLOUT:** Operation Blue Star cast a long shadow on the politics of Punjab and India. On October 31, 1984, Indira was assassinated by two of her Sikh bodyguards, which led to mobs going on the rampage, killing 2,146 people in Delhi alone.

In 1985, Sant Harchand Singh Longowal, a leader of the Akali Dal, the country's oldest regional party, was assassinated within a month of his signing a peace accord with Prime Minister Rajiv Gandhi. The "dark decade" of violence and instability in Punjab followed.

Operation Blue Star remains a potent factor in Punjab's politics even today. Akali Dal president Sukhbir Singh Badal has been showing a picture of the damaged Akal Takht at every election rally in an attempt to whip up anger against the Congress. The AAP and BJP have been reminding voters of the violence unleashed on Sikhs in the aftermath of Indira's assassination.

Many Sikh voters, however, do not hold the current leadership of the Congress responsible. Rahul Gandhi has performed sewa at the Golden Temple on several occasions, and the Congress hopes for a good showing in the election.



### June 1, 2015: Holy Book stolen

After a saroop of the Guru Granth Sahib disappeared from a gurdwara in Burj Jawahar Singh Wala, Faridkot, widespread protests broke out across Punjab. Extensive searches were carried out, including draining a large water body behind the gurdwara, but the saroop was not found.

In October 2015, torn pages from what was believed to be the stolen saroop were discovered outside the Bargari gurdwara across the road. This led to a sharp escalation of unrest, and two protesters were killed in police firing at Behbal Kalan. More than 100 incidents of sacrilege have been reported over the last few years, some of which have led to deadly lynchings of the alleged accused.

**FALLOUT:** The issue of sacrilege has been extremely sensitive, and has left a significant mark on the politics of the state since 2015. After two successive terms in power, the Akali Dal, which was seen as being lenient towards those responsible for the incidents, suffered a major defeat in the 2017 elections, when it could win only 15 of the 117 seats in the Assembly.

Congress Chief Minister Capt Amarinder Singh faced dissent and was replaced in 2021 after his party colleague Navjot Singh Sidhu accused him of not doing enough to bring the accused in the 2015 case to justice. Last December, Sukhbir Singh Badal apologised for the incidents of sacrilege during his tenure.

The issue remains sensitive, with ongoing political repercussions. In 2022, the Punjab Assembly passed a Bill that provides for life imprisonment for sacrilege of the Guru Granth Sahib and other religious texts.

### WHY CAN ACCUSED PERSONS IN PRISON CONTEST POLLS BUT NOT VOTE?

Last week, Amritpal Singh, the jailed head of the pro-Khalistan outfit Waris Punjab de, announced his intention to contest the Lok Sabha elections from Punjab's Khadoor Sahib seat, to be held on June 1.

Though his ability to campaign may be limited, his right to contest polls while facing criminal charges will not be under question unless he is convicted. However, he will be bared from casting his vote in the upcoming elections — much like other accused people in prisoners across India.

What is the legal status of the right to vote and the right to be elected? How does the law deal with voters and candidates who are imprisoned?

#### **The right to vote and the right to be elected are 'statutory rights'**

In 1975, the Supreme Court in the case of *Indira Gandhi v Raj Narain* recognised that free and fair elections are a part of the 'basic structure' of the Constitution of India, and any laws or policies that would violate this principle could be struck down.

Though free and fair elections have been placed on the highest constitutional pedestal, the Supreme Court has held that the rights to elect and be elected do not enjoy the same status. For instance, a five-judge constitution Bench in 2006, in the case of *Kuldip Nayar v. Union of India* held that the right to vote (or the right to elect as it was called) is "pure and simple, a statutory right". This means that voting is not a fundamental right and can be repealed.



The same was held for the right to be elected by the Bench, ruling that laws enacted by Parliament could regulate both these statutory rights.

#### **Bar against contesting elections only after conviction**

Section 8 of the Representation of People Act, 1951 (RP Act) is titled “Disqualification on conviction for certain offences”. Suppose a person is convicted of any of the offences in the exhaustive list provided in the provision. In that case, they will be disqualified from contesting elections to Parliament or state legislatures from the date of conviction onwards and face further a six-year disqualification from contesting in elections beginning from the date of their release.

This disqualification only kicks in once a person has been convicted and does not apply if they have only been charged with criminal offences. In recent years, this section has seen two major challenges in the Supreme Court.

In 2011, the Public Interest Foundation filed a petition arguing that persons who have criminal charges framed against them or file false affidavits regarding their criminal history should also be disqualified. However, a five-judge bench unanimously held that only the legislature could alter the RP Act.

In 2016, advocate and former BJP spokesperson Ashwini Kumar Upadhyay filed a petition seeking a permanent disqualification for convicted persons. This case is still ongoing, and in November 2023 the Apex Court, taking note of delays in criminal cases against MPs and MLAs, ordered the Chief Justices of all High Courts to register a suo motu case titled “In Re: Designated Courts for MPs/MLAs” for HCs to issue directions for the “expeditious and effective” disposal of these cases. However, according to a report submitted to the court in April 2024, there are still 4,472 such cases pending.

#### **Exceptions to disqualification**

The Election Commission of India (ECI) is empowered under Section 11 of the RP Act to “remove” or “reduce” the period of disqualification. In 2019, the ECI used this power to reduce the period of disqualification faced by Sikkim Chief Minister Prem Singh Tamang who was released following a one-year prison sentence in 2018 for misappropriating funds in the procurement of cows. The Sikkim Krantikari Morcha leader went on to win in the bye-election for the Poklok Kamrang assembly seat.

Another situation where a disqualified MP or MLA can still contest is when their conviction is stayed on appeal to a higher court. In 2019 the Supreme Court held that once a conviction is stayed “the disqualification which operates as a consequence of the conviction cannot take or remain in effect”.

Dhananjay Singh, a former Bahujan Samaj Party MP whom a district court convicted for kidnapping in 2020, approached the Allahabad HC for a stay on his seven-year sentence which would allow him to contest in Lok Sabha elections. However, though the court granted bail, the court refused to stay the conviction stating that “it is the need of the hour to have purity in politics”.

#### **Bar against the right to vote for confined persons**

Section 62 of the RP Act provides a series of restrictions on the right to vote including sub-clause (5) which states in broad terms “No person shall vote at any election if he is confined in a prison,



whether under a sentence of imprisonment or transportation or otherwise, or is in the lawful custody of the police”.

With an exception provided for those in preventive detention, this provision effectively bars every individual who had criminal charges framed against them from casting their vote unless they have been released on bail or have been acquitted. In 1997, the Supreme Court rejected a challenge to Section 62(5) in the case of Anukul Chandra Pradhan, Advocate, Supreme Court v. Union of India.

The petitioners had argued that the rule violated the right to equality by denying voting rights to undertrials and those who are detained for being unable to furnish the bail amount while allowing those released on bail to vote.

However, the court rejected this argument on four grounds. First, the court re-affirmed that the right to vote was a statutory right and could be subject to statutory limitations. Second, the court held that there is a “resource crunch” as infrastructure would have to be provided and police would have to be deployed. Third, a person in prison because of their conduct “cannot claim equal freedom of movement, speech and expression”. Last, restrictions on prisoners’ right to vote are reasonable as it is connected to keeping “persons with criminal background away from the election scene”.

This decision has been relied upon by both the Supreme Court (in 2023) and the Delhi High Court (in 2020) in the recent past to dismiss pleas seeking voting rights for prisoners.

#### WHY PRIME MINISTER MODI WILL MEDITATE AT KANYAKUMARI’S VIVEKANANDA ROCK

Prime Minister Narendra Modi announced on Tuesday (May 28) that he will visit and meditate at the Vivekananda Rock Memorial in Kanyakumari, Tamil Nadu, from May 30 to June 1 to mark the culmination of BJP’s Lok Sabha election campaign.

This marks a callback to his two-day visit to Uttarakhand’s Kedarnath shrine at the end of the 2019 election campaign, where he undertook a 15-hour-long ekantvaas (solitary meditation).

Here is what may be behind the prime minister’s decision to meditate in Kanyakumari.

#### The rock where Swami Vivekananda attained enlightenment

The Vivekananda Rock is a tiny rocky islet located some 500 metres from Kanyakumari’s Vavathurai beach, the southern tip of mainland India, at the confluence of the Indian Ocean, the Arabian Sea and the Bay of Bengal. Today, it is accessed via a 15-minute ferry service from Vavathurai.

In 1892, however, Swami Vivekananda, the revered Hindu philosopher-saint, swam from the shores of Kanyakumari to the rocky islet to meditate. His disciples believe that he meditated there for three days and three nights, and attained enlightenment. Swami Vivekananda had been wandering for four years across the length and breadth of India, and at Kanyakumari, finally formulated his philosophy

As he wrote to Swami Ramkrishnananda (not to be confused with his guru, Sri Ramakrishna) in 1894: “At Cape Comorin sitting in Mother Kumari’s temple, sitting on the last bit of Indian rock, I hit upon a plan: We are so many Sannyasins wandering about, and teaching the people metaphysics — it is all madness. Did not our Gurudeva use to say, “An empty stomach is no good for religion?” That those poor people are leading the life of brutes is simply due to ignorance. We

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



have for all ages been sucking their blood and trampling them underfoot” (as quoted in S P Agarwal’s *The Social Role of Gita*, 1993).

On the eve of Swami Vivekananda’s birth centenary in 1963, the Vivekananda Rock Memorial Committee led by RSS activist Eknath Ranade made efforts to commemorate the site of his enlightenment. The memorial on the rock was formally inaugurated by the President V V Giri in 1970.

#### **Behind the prime minister’s decision**

Prime Minister Modi has long revered Swami Vivekananda as a role model. As a young man, he was even a member of the Ramakrishna Mission, a spiritual and philanthropic organisation founded by Swami Vivekananda.

Speaking at the Mission’s 125th anniversary celebrations last year, he had said, “Swami Vivekananda had a grand vision of India, and I am sure he is proudly watching India working to fulfil this vision”

The selection of the Vivekananda Rock as the site for Prime Minister Modi’s meditative retreat also assumes significance in light of his pronounced push into the South during this year’s Lok Sabha campaign. Over a third of the prime minister’s trips to the South occurred in the last three years, with seven visits made to Tamil Nadu in 2024 alone.

The five southern states — Kerala, Tamil Nadu, Andhra Pradesh, Telangana, and Karnataka — account for 131 of 543 Lok Sabha seats. Tamil Nadu alone accounts for 39 seats in the Parliament. Prime Minister Modi has forecasted the emergence of the BJP as the single-largest party in the South. In an interview to PTI on May 20, he said: “We have already seen a jump in mind-share already, we will see a big jump in seat share and vote share for us in the region.”

### **IN HAPUR, A MARRIAGE CEREMONY, A MORAL OUTRAGE AND A HEARTENING CHANGE IN SCRIPT**

A lover’s kiss is usually the denouement that most romances await. Boy meets girl. Love blooms. Then comes the lovers’ trial, at the end of which the path to happily-ever-after emerges. In western UP’s Hapur, though, the kiss turned out to be the beginning of what could well be a Hrishikesh Mukherjee movie script. The band, baaja and baraat were in attendance, so were the guests. On the mandap, the garland exchange between the bride and the groom had just happened. And then came the plot twist: A kiss on the forehead of his childhood-sweetheart-now-almost-wife set the sanskari tempers rising at the so-called transgression. The wedding was called off, a brawl ensued. But wait, that’s not where the story ended.

That night, the young woman eloped to her beau’s place, where the wedding was solemnised, the ceremony overseen, among others, by the groom’s mother. The fracas of the previous day, she said later, amounted to naught: After all, “If a husband doesn’t kiss his wife, who else will?” In a country where public displays of affection have been battlegrounds for the young trying to assert their freedoms and where the line between affection and obscenity blurs at the discretion of a conservative moral police, could there be a more refreshing narrative frame than the nonchalance of the mother of the groom?

In 2014, the vandalism of a cafe in Kozhikode for allowing young couples to hold hands or kiss had led to the Kiss of Love protests across the country. Since then, Indian cities have see-sawed



between greater accommodation of public displays of intimacy and patriarchal outrage over “immoral activities”. One thing stands out though: Like the groom’s mother, or his sister who stood with the couple. It seems that it is the women who find it easier to read the changing script. The men in the family? They were the ones outraging and brawling.

**EXPERT EXPLAINS: WITH PUNE’S PORSCHE CRASH CASE, HOW BLOOD IS TESTED FOR ALCOHOL AND WHY TIMING IS CRUCIAL**

The 17-year-old son of a Pune builder was reportedly inebriated while driving at high speed, when he crashed into a motorbike killing two young IT professionals on May 19. It has now come to light that blood samples collected to test for alcohol content at the time of the incident were swapped by the forensics team. One of India’s top forensics experts explains why blood samples should be collected immediately after an incident, and what happens if they aren’t.

**When should a blood sample be collected after such an incident?**

A blood sample should ideally be collected within 10 hours of the incident. The washing rate of alcohol is around 10-15 mg/ 100 mL/hour (i.e., in a sample of 100mL of blood, with the passing of each hour, 10-15 mg of alcohol is metabolised). This rate differs from person to person — young men are likely to process it faster than older men and women. The 10-15 mg/mL/ hour rate is just an average.

Based on the blood alcohol level found in a sample, it is very easy to determine the levels at the time of the incident. It is even possible to calculate the blood alcohol level at the time of an incident after 10 hours have passed, based on the trace amounts found in the blood. But this is not ideal.

**What happens if the alcohol is completely metabolised by the time a sample is collected?**

Even when the blood alcohol level is found to be zero, it doesn’t invalidate that the person had been drinking. The lab report is just one of the things that forms the basis of evidence a forensic doctor presents in court. The number of drinks consumed can be reconstructed from the bills at the bar, statements of the bar owner or staff, and available CCTV footage.

Looking at the number of drinks consumed, the blood alcohol level can be calculated using an easy formula.

In the Pune case, such a scientific reconstruction can be used to determine the accused’s blood alcohol levels. This would be permissible in court. Even in the 1999 BMW hit-and-run case, in which six people were killed in Delhi, the samples were collected after 14 hours — and the accused had consumed three drinks after the incident as well. But it was possible to accurately calculate the levels using the totality of evidence available.

**How can tampering of blood samples be prevented?**

The samples are sealed and handed over to the authorities to prevent tampering. Yet, it is possible to tamper with them, especially during transit. This is why AIIMS now has a machine to calculate the blood alcohol level on site, so that samples do not have to be sent out for testing.



## SPLASH BACK

On May 30, a start-up named Agnikul Cosmos successfully conducted the first test flight of its rocket 'Agnibaan' in a mission called 'Suborbital Tech Demonstrator' (SOrTeD). The flight was Agnikul's fifth attempt after the first four were called off owing to suboptimal launch conditions. 'Agnibaan' is a two-stage, 14-tonne launch vehicle designed to lift small satellites to low-earth orbits. Both stages are powered by bespoke semi-cryogenic engines. The test flight flew a 'minimal' version of the rocket with one engine (or stage). Notably, many of the vehicle's components, including the engines, are 3D-printed, and Agnikul has said it will be able to build one rocket a month. With the test flight, Agnikul took 'Agnibaan' on its first steps towards being a full-fledged launch vehicle, which will expand India's commercial launch services offering in keeping with the expanding market for small satellites and the services they can provide. The roster is currently dominated by the Polar Satellite Launch Vehicle (PSLV) and will soon be joined by the Small Satellite Launch Vehicle, both of the Indian Space Research Organisation (ISRO). One blip Agnikul will have to address is the subpar communication of the parameters of the test flight. This is one area in which ISRO has not distinguished itself and it is important for new space startups to steer clear of the same mould.

This said, the flights of 'Agnibaan' — and Skyroot's 'Vikram' in 2022 — herald two prospects more valuable than commercial fortune. ISRO and/or scientists trained there have shared technical know-how and provided physical systems for many private missions, which these startups are now testing, cutting short the time and expenses required. Likewise, these startups are poised now to light the way for ISRO and others, potentially accelerating innovation in the sector. For example, ISRO has been testing a semi-cryogenic engine of its own that could draw from lessons learnt at Agnikul. The government must ensure that the corresponding bureaucratic and legal frameworks encourage the free flow of knowledge. Second, in April, ISRO said it had developed engine nozzles made of a carbon-carbon composite to replace the Columbian alloy nozzles on the PSLV's fourth stage. The switch increased PSLV's payload capacity by 15 kg — a significant amount for an already technologically mature launch vehicle, made possible by education and research opportunities that allowed know-how accrued in some sectors to disperse in others. This privilege is currently most pronounced in India's spacefaring enterprise. As more innovation enters the fray, it is hoped that the resulting solutions and insights will benefit everything, from aerospace to zoology.

### Note:

Previously called GSLV-MkIII, the LVM3 is ISRO's most powerful rocket so far. It can carry up to 4-tonne satellites into the geostationary orbit and up to 8-tonne satellites into the lower earth orbits.

## HOW CRIMINALS BASED IN SOUTHEAST ASIA ARE TRAPPING THROUGH INDIANS ONLINE SCAMS

A large number of Indians are falling prey to financial fraud carried out over the Internet, allegedly by criminals based in three contiguous southeast Asian countries: Myanmar, Laos, and Cambodia.

In its analysis of trends seen from January to April, the Indian Cybercrime Coordination Centre (I4C) found that 46% of such frauds reported in this period — in which the victims cumulatively lost an estimated Rs 1,776 crore — originated in these three countries.



The I4C works under the Union Home Ministry “to create an effective framework and ecosystem for the prevention, detection, investigation, and prosecution of cybercrime in the country”.

National Cybercrime Reporting Portal (NCRP) data show 7.4 lakh complaints were made between January 1 and April 30 this year, while 15.56 lakh complaints were received in all of 2023.

A total 9.66 lakh, 4.52 lakh, 2.57 lakh, and 26,049 complaints were received in 2022, 2021, 2020, and 2019 respectively.

### **Types of cybercrime**

The I4C has identified four broad categories of fraud originating from these three countries, following certain modus operandi.

**TRADING SCAM:** The alleged fraudsters issued ads on social media offering free trading tips, often using pictures of well known stock market experts and fake news articles. The victims were asked to join a WhatsApp group or Telegram channel, where they would receive “tips” on making money by investing in shares.

After a few days, the victims would be asked to install some specific trading applications and register themselves in order to receive further guidance on making “huge” profits. The victims would start “investing” on the apps, following recommendations made by the cybercriminals. None of these apps would be registered with the stock market regulator Securities and Exchange Board of India (SEBI), but the victims typically neglected to check this.

The victims deposited money in particular bank accounts to “buy shares”, and were shown some fake profits in their digital wallets. But when they tried to withdraw this “money”, they were shown a message that they could do so only after they had accumulated a certain amount, say Rs 30-50 lakh, in their wallet. This meant the victim had to keep “investing” and, sometimes, had to also pay “taxes” on the “profits” they were purportedly earning.

“After analysing data from the first four months of this year, we found that Indians lost Rs 1420.48 crore in the trading scam,” I4C CEO Rajesh Kumar said.

**DIGITAL ARREST:** Potential victims would get a call in which the caller would tell them that the victims had sent or were the intended recipients of a parcel containing illegal goods, drugs, fake passports, or other contraband.

In some cases, relatives or friends of the target would be told that the target had been found to be involved in a crime.

Once they had the target — who would be chosen carefully — in their net, the criminals would contact them over Skype or another video calling platform. They would pose as law enforcement officials, often wearing uniforms and calling from places resembling police stations or government offices, and demand money for a “compromise” and “closure of the case”.

In certain cases, the victims were “digitally arrested”, which meant they were forced to stay visible to the criminals until their demands had been met. Indians lost a total Rs 120.30 crore in this type of scam in the January-April period, Kumar said.





**INVESTMENT SCAM (TASK-BASED):** Victims typically received a WhatsApp message from an overseas number, purportedly belonging to a representative of a company, with an offer to earn a large sum of money, say, Rs 30,000, while working from home.

Those who responded were told they would have to help boost the social media ratings of some entities by giving them a five-star rating. After the “task” was completed, victims received a “code”, which they were asked to share with their “admin” on Telegram.

The “admin” would ask the victims where they wanted to receive their money and, after a few five-star rating “tasks” on YouTube or Google reviews etc. were completed, would deposit a small sum, perhaps Rs 500.

At this point, the victim would be asked to participate in a “pre-paid” or “merchant” task, in which a higher return would be promised after a certain amount — which could be between Rs 1,500 and Rs 1 lakh — had been deposited. Victims who refused were blocked, but those who chose to participate were told the money and profit would come to them in a day.

However, the following day, the victims would be told that their “performance score” was not good enough, and they needed to improve it by participating in new tasks so they could get their money. Indian victims lost a total Rs 222.58 crore in this “investment scam (task based)”, Kumar said.

**ROMANCE/DATING SCAM:** This was a somewhat more conventional trap, though laid online. The victims, who were male, were lured by people they thought were foreign women. These “women” would propose relationships or marriage, and then make plans to come and meet in person. However, the victim would typically get a call from the “woman” that she had been detained at the airport, and needed money to get out.

On its website, the US FBI, which has dealt with such cases, says romance scammers are experts at appearing genuine, caring, and believable. These con artists lurk on most dating and social media sites, and seek to quickly gain the victim’s trust.

Kumar said Indian victims lost a cumulative Rs 13.23 crore in romance/dating scams in the first four months of this year.

### **Why Southeast Asia**

I4C zeroed in on Myanmar, Laos, and Cambodia after analysing data on its National Cybercrime Reporting Portal (NCRP), inputs received from states and Union Territories, and some open-source information.

“The cybercrime operations based in these countries employ a comprehensive array of deceptive strategies, including recruitment efforts by exploiting social media to lure Indians with fake employment opportunities,” Kumar said.

The I4C has found that many web applications used in the crime had Mandarin characters. “We cannot rule out some kind of Chinese connection,” Kumar said.

## **IMD FORECASTS ‘ABOVE NORMAL’ MONSOON**

The India Meteorological Department (IMD) has retained its outlook of an ‘above normal’ monsoon this year. In April, the agency forecast June-September rainfall to be 6% above the normal of 87 cm. India’s north-eastern States are expected to receive deficient rain.

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



The monsoon 'core zone', which encompasses most of central India and is critical for the kharif crop, and southern India are expected to see 'above normal' rainfall, Mrutunjay Mohapatra, Director-General, IMD, said on Monday.

The conditions for the monsoon over Kerala were "favourable" and the onset is likely in the next five days. Cyclone Remal, which made landfall in Bangladesh on Monday, had given a push to the eastern branch of the approaching monsoon system. The cyclone has nudged it closer to the Indian mainland though it was yet uncertain if the monsoon would begin in eastern India before Kerala — an extremely unusual, but not unprecedented phenomenon, said Mr. Mohapatra.

The IMD had earlier forecast the onset over Kerala on May 31, within an error window of four days.

As in April, India's strong monsoon rainfall is predicated on El Niño conditions withering away to 'neutral' conditions and the onset of La Niña conditions during the later part of the monsoon season. "At present, neutral Indian Ocean Dipole [IOD] conditions are prevailing over the Indian Ocean. The latest forecasts from many global climate models indicate positive IOD conditions are likely to develop during the monsoon season," said a statement from the IMD.

El Niño, La Niña and IOD conditions refer to temperatures in the Central Pacific, and the eastern and western halves of the Indian Ocean respectively. La Niña conditions coupled with a favourable IOD spell good rains for India.

## NOT JUST DELHI: HOW TEMPERATURE RECORDS ARE TUMBLING ACROSS THE WORLD

The extremely high temperatures recorded in New Delhi in the last two days are extraordinary. But they are in keeping with the global trend in the last couple of years that has seen record-breaking temperatures being reported from several locations across the world.

For example, the United Kingdom crossed 40 degree Celsius for the first time ever in July 2022. A small town in China's northwest recorded 52 degree Celsius last year, the highest ever for that country. In 2021, Sicily in Italy recorded 48.8 degree Celsius, the highest for Europe ever. These are just a few examples.

An analysis by Carbon Brief, a UK-based publication focused on climate change, last year showed that nearly 40% of the Earth had recorded its highest-ever daily temperature between 2013 to 2023. This includes places in Antarctica as well. The highest temperature in India, in Rajasthan's Phalodi, was also recorded during this period.

However, the highest ever temperature recorded anywhere on Earth, 56.7 degree Celsius in a place called Death Valley in the desert of California, United States, was recorded more than 100 years ago, in 1913.

### Delhi Anomaly

If the 52.9 degree Celsius recorded at one of the stations in Delhi on Wednesday is verified, it would be an all time high for India. But as of now it is suspect. The India Meteorological Department (IMD) said it was checking the authenticity of the reading by an automatic weather station in Mungeshpur, located on the northern outskirts of Delhi, bordering Haryana.

The doubts over the Mungeshpur reading stems mainly from the fact that none of the other stations in Delhi — there are 20 of them — recorded a temperature that was close to 52.9 degree

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



Celsius. The maximum temperature in other stations of Delhi on Wednesday was recorded by the Najafgarh station, which gave a reading of 49.1 degree Celsius. The station that is taken to be representative of Delhi — Safdarjung — showed a maximum temperature of 46.8 degree Celsius. This itself was an 80-year record, the highest since 1944.

Even if the Mungeshpur data was not so overtly suspicious — and IMD officials admit it is — a record-breaking temperature like this would have needed a verification. Met offices across the world do a double-check on any such extreme weather event. It took a few days for the UK record to be officially confirmed by the UK Met office. The Sicily temperature record for Europe became official only in January this year, almost three years after it was recorded.

But record-breaking or not, there is no doubt about the fact that Delhi, and indeed most of northern India, is going through one of the worst heatwaves. In most places, maximum temperatures are 5 to 10 degree Celsius above normal. Wednesday was the fourth consecutive day when the Safdarjung station recorded a temperature well above 45 degree Celsius. The fact that temperatures have not been record-breaking is no consolation for populations reeling under increasingly prolonged and severe heatwave conditions.

“It is very concerning that annual trends in heatwaves now show temperature departures of 5-9 degree Celsius from the normal summer weather... Heatwaves are clearly the single largest threat to India’s well-being today,” said Aarti Khosla, director of Climate Trends, a climate organisation.

“Temperatures in Delhi and neighbouring NCR states in the last two days are proof that the issue is now about survivability,” she said.

### **Global Warming**

The year 2024 was predicted to be extremely warm. Last year had emerged as the warmest year on record, globally, and the effect was expected to continue this year as well. And so far, it has.

April 2024 was the 11th consecutive month when the global average monthly temperature for that month touched a new record, according to the Copernicus Climate Change Service, an agency of the European Commission. The one year period between May 2023 to April 2024 was warmer than any previous 12-month period, about 1.61 degree Celsius higher than the pre-industrial (1850-1900) average.

The warming over India is not as pronounced as the world taken as a whole. Annual mean temperatures over India have risen by about 0.7 degree Celsius compared to 1900 levels. This is significantly lower than the 1.59 degree Celsius rise for average land temperatures across the world. If oceans too are included, global temperatures right now are at least 1.1 degree Celsius higher than pre-industrial averages.

However, heatwaves over India are noticeably more severe. In 2023, heatwave conditions prevailed even in February, technically a winter month for which heatwave thresholds are not even defined because they are not expected.

The current spell of high temperatures in Delhi, and most of north India, looks anomalous mainly because it is being compared to normal temperatures that are based on averages of 1981-2010 period. Going forward, 45 degree Celsius plus temperatures are likely to very quickly become the new normal, and a 50 degree Celsius reading will no longer look suspicious.



## MORE CONCRETE, MORE HEAT: WHY OUR CITIES ARE HOTTER THAN EVER

Even as large parts of the country swelter in a brutally hot summer, with prolonged heat waves, a recently published report shows that rising temperatures is not the sole contributing factor to the heat stress being experienced in urban India. According to a report by the Centre for Science and Environment, the extreme discomfort of the summer months in Chennai, Mumbai, Delhi, Bengaluru, Kolkata and Hyderabad over the last two decades is caused by a combination of air temperature, land surface temperature and relative humidity, as well as a rapid increase in built-up areas and concretisation. It poses a grave risk to lives, especially among vulnerable groups like the elderly, babies, pregnant women, those who live in slums and work outdoors.

This is the third straight year of severe heat waves in India, which have been far longer — over 10 days-long — this time than the usual four to eight days. Thanks to climate change, temperatures have shot up, as has humidity. But, as the CSE report points out, the effect of this — the moisture in the air keeps sweat from evaporating fast enough, making it seem even hotter than it actually is — is compounded by other factors, including changes in land use and the growing urban sprawl. This has resulted in the “urban heat island effect”: The trapping of heat due to a dense concentration of buildings, paved roads and other surfaces made of materials like concrete, glass and steel, results in higher temperatures in city centres than in the outlying areas. One alarming consequence of this is that summer nights now offer little respite from the searing heat of the day, with cities across climatic zones not cooling down at the rate they once did. This is a serious cause for concern as the heat stress continues to build, increasing the risk of heat-related illnesses and even death.

All these factors would need to be taken into consideration for relief measures to be effective. While more than 20 states have worked with the NDMA to create heat action plans (HAP), most remain on paper. They are hampered by a lack of funding, granularity and a sustainable vision for transformation. There is a growing consensus among experts that city-specific management plans, which take into account local factors, are a far more effective response to heat waves. Such plans should prioritise green spaces and water bodies and target all heat generators, including vehicles, industries and concrete surfaces — an example is Ahmedabad’s Cool Roofs programme, which offers an affordable solution for the urban heat island effect. Along with emergency steps to be implemented during a heat event, long-term planning can keep cities from heating up excessively and save lives.

## CYCLONE REMAL: FLIGHT OPERATIONS SUSPENDED AT KOLKATA AIRPORT

A deep depression over the Bay of Bengal intensified into a cyclonic storm, named Remal, on Saturday evening is expected to make landfall between Sagar islands in West Bengal and Khepupara in Bangladesh, the department said.

— North and South 24 Parganas, Purba Medinipur, Howrah, Hooghly districts in West Bengal have been placed under red alert, as the storm gets closer Sunday. Extremely heavy rainfall (over 204mm in 24 hours) with gusty winds over these districts.

### For Your Information:

— **Cyclone Remal** is a tropical cyclone. The name Remal, meaning ‘sand’ in Arabic, was chosen Oman, and assigned according to the standard convention of naming tropical cyclones in the region.



— The National Disaster Management Authority (NDMA) classifies cyclones broadly into two categories: extratropical cyclones and tropical cyclones.

— A ‘Cyclonic Storm’ or a ‘Cyclone’ is an intense vortex or a whirl in the atmosphere with very strong winds circulating around it in anti-clockwise direction in the Northern Hemisphere and in clockwise direction in the Southern Hemisphere. Tropical cyclones are also referred to as ‘Hurricanes’ over Atlantic Ocean, ‘Typhoons’ over Pacific Ocean, ‘Willy-Willies’ over Australian Seas and simply as ‘Cyclones’ over north Indian Ocean (NIO).

— Also known as mid-latitude cyclones, extratropical cyclones occur outside the tropics (that is beyond the areas that fall under the Tropic of Cancer and the Tropic of Capricorn). They have “cold air at their core, and derive their energy from the release of potential energy when cold and warm air masses interact”, according to the US National Oceanic and Atmospheric Administration (NOAA).

#### EXPLAINED: THE DANGER FROM LANDSLIDES, WITH SEVERAL DEAD IN NORTHEAST INDIA AFTER CYCLONE REMAL

Six people were killed in West Bengal in incidents triggered by cyclone Remal that struck the coastline on Sunday (May 26) night. At least 27,000 houses were damaged in the coastal districts. Though effective early warning systems and timely evacuations have greatly reduced human casualties from cyclones over the years, a few deaths of accidental nature, and destruction of thatched or weak structures in coastal areas are possible.

But Remal has led to largescale damage in the relatively faraway Northeast as well. Heavy rain caused by the cyclone triggered landslides in several places in Meghalaya, Mizoram, Assam, and Nagaland, which have resulted in the deaths of at least 30 people so far. The collapse of a stone quarry in Aizawl, Mizoram, alone has killed at least 14 people. The toll is expected to rise.

The heavy downpour in the Northeast was not unexpected. The India Meteorological Department (IMD) had warned of this in all its cyclone bulletins. Almost the entire region, including Sikkim and northern West Bengal, is landslide prone. Cyclone-triggered landslides have hit Northeastern states on earlier occasions as well. Cyclone Aila had caused landslide events in this region in May 2009.

The latest episode spotlights the need for building resilience to multi-hazard disasters. One event can trigger another, and can lead to multiple disasters simultaneously. Over the last few years, India has witnessed events in which heavy rainfall has resulted in a breach of glacial lakes, causing flash floods that have resulted in landslides and flooding. Massive power outages, transport and communication failures, disruption of health services, and difficulties in rescue and relief operations have followed.

Although India has done well to prepare and safeguard itself against certain natural events such as cyclones, landslides remain a weak point. An early warning system is still being tried out, and pressures from population, development, and infrastructure projects have increased vulnerability.

#### **Landslide vulnerability**

About 0.42 million square km of India’s landmass, or about 13% of its area, spread over 15 states and four Union Territories, is prone to landslides, according to the Geological Survey of India (GSI).



This covers almost all the hilly regions in the country. About 0.18 million square km, or 42% of this vulnerable area is in the Northeastern region, where the terrain is mostly hilly.

This area is also prone to earthquakes, which too, are a major trigger for landslides.

Government data show that between 2015 and 2022, the eight states in this region, including Sikkim, recorded 378 major landslide events which resulted in loss of life or damage to property. These events constituted 10% of all major landslides in India during this period. In the country as a whole, Kerala saw the largest number of landslides — 2,239 — most of which occurred after the disastrous 2018 floods in the state.

The National Disaster Management Authority (NDMA) has been working with GSI and other agencies to mitigate and manage the risks from landslides. A National Landslide Risk Management Strategy was finalised in 2019, which talked about vulnerability mapping, identifying the most vulnerable locations, development of an early warning system, and preparation of mountain zone regulations. But most of the work still remains to be done.

### **Early warning**

Some early warning systems have been developed and deployed on a trial basis at a few locations. These warning systems are linked to rainfall forecasts from IMD. The rainfall prediction is combined with soil and terrain information to calculate whether it is likely to result in displacement of land.

“Most landslides in the hilly regions are caused by heavy rainfall. Earthquakes can trigger landslides too, but we do not see that very often. In the Northeastern region, for example, no major landslide has been triggered by an earthquake in the last one or two decades,” Debi Prasanna Kanungo, a scientist at Central Building Research Institute (CBRI), Roorkee, said.

“In any case, since earthquakes themselves cannot be predicted, we cannot have a landslide early warning based on earthquakes. But rainfall-based early warning systems for landslides seem to work well,” Kanungo added.

Kanungo has been involved in setting up an early warning system in Nagaland to protect the state’s legislative Assembly. However, as of now, only a few of these location-specific early warning systems have been deployed.

CBRI and IIT Roorkee are in the process of installing these at two locations in Sikkim, another two in Uttarakhand, and one in Kerala. Other institutions like IIT Mandi are also working to develop and set up early warning systems.

Rainfall forecasts, on the other hand, come quite early. Reliable location-specific predictions are available at least a day in advance. Scientists create a rainfall threshold for land movement and soil displacement at each landslide-prone location. If the rainfall forecast is higher than the threshold, an early warning for landslides is issued.

“Usually, a single day’s rainfall does not trigger landslides, unless there is a cloudburst event. Sustained heavy rainfall over a week or 10 days is what becomes dangerous,” Kanungo said. A prolonged spell of heavy rain in Himachal Pradesh last year resulted in almost 500 landslide events.



### Human pressure

The risk from landslides has been exacerbated by the failure to remain mindful of the terrain's ability to withstand the load. Many hilly areas do not have building regulations. Often, regulations are not implemented effectively. New constructions, infrastructure development, and even agricultural practices can increase the risk of landslides.

"Every mountainous area has a carrying capacity. Development is essential, and one cannot stop the creation of infrastructure or new facilities or economic activity for local populations. But these have to be regulated. Sustainability has to be factored in, so that the load does not exceed the carrying capacity. This is where zoning regulations come in. These have to be finalised and implemented strictly," Kanungo said.

### INSIDIOUS, INCENDIARY

The devastating fires, at a gaming centre in Rajkot, Gujarat and a newborn nursing clinic in Delhi within 24 hours of each other, which left over 30 dead, is another grim reminder of one of India's insidious threats: the pervasive nature of the negligence of the fire safety of buildings by a whole range of stakeholders — from builders and proprietors to regulatory authorities. While the Bureau of Indian Standards has set detailed fire safety protocols in its National Building Code of India (NBC) 2016, it is a recommendatory document, as fire services is a State subject, and enforced at the municipality level. The sheer disregard for India's fire safety norms is apparent from the opening lines in the 'About Fire Service – Background' page of the Director General, Fire Services website under the Ministry of Home Affairs. It reads, "The fire services are not well organized in India", adding, "in recent years the requirements for fire safety cover have increased manifold whereas the development of fire service has not made much headway".

The National Disaster Management Authority had recommended to the 13th Finance Commission, an allocation of ₹7,000 crore to revamp India's fire and emergency services. But the Commission sought an allocation of almost ₹90,000 crore at the municipality level, recognising the need for a tailor-made revamping and restructuring of fire and emergency preparedness. A 2019 Home Ministry response to the Rajya Sabha noted that India had only 3,377 fire stations, when a 2012 national report on fire hazards and risk analysis sought more than double that number. The staff shortage is even more appalling. The entire country had only about 55,000 fire servicemen in 2019, when the requirement was about 5,60,000 seven years earlier. The Centre belatedly set aside ₹5,000 crore last July asking States to cough up another ₹1,400 crore to modernise emergency services. This follows the 15th Finance Commission's advice to set aside 12.5% of all allocations towards the National/State Disaster Response Funds. With rising heatwaves and extreme weather events nationwide, it is clear that a synchronisation of the 2016 NBC and the Energy Conservation Building Code is required to attempt a holistic approach to address fires, as standards for construction material, electrical wiring, air-conditioning, and a whole range of cooling materials have to be revamped. More importantly, India's polity, bureaucracy, policymakers and entrepreneurs must urgently address this insidious threat.

### AN OVERVIEW OF THE AMRUT SCHEME

#### The story so far:

Around 36% of India's population is living in cities and by 2047 it will be more than 50%. The World Bank estimates that around \$840 billion is required to fund the bare minimum urban



infrastructure over the next 15 years. The AMRUT (Atal Mission for Rejuvenation and Urban Transformation) scheme was a flagship programme launched by the NDA-1 government in June 2015, with its 2.0 version launched on October 1, 2021.

#### **What is the AMRUT scheme?**

Some of the challenges in infrastructure development with respect to water, mobility, and pollution were to be met by this scheme with some financial assistance from the Centre and the rest of the share mobilised by both States and respective cities. The mission was drawn to cover 500 cities and towns with a population of over one lakh with notified municipalities. The purpose of the AMRUT mission was to (i) ensure that every household has access to a tap with assured supply of water and a sewerage connection (ii) increase the value of cities by developing greenery and well-maintained open spaces such as parks and (iii) reduce pollution by switching to public transport or constructing facilities for non-motorised transport. The total outlay for AMRUT was ₹50,000 crore for five years from FY 2015-16 to FY 2019-20.

AMRUT 2.0 was aimed at making cities 'water secure' and providing functional water tap connections to all households in all statutory towns. Ambitious targets were set up such as providing 100% sewage management in 500 AMRUT cities. The total outlay for AMRUT 2.0 is ₹2,99,000 crore, with the Central outlay being ₹76,760 crore for five years, and the rest of the amount to be mobilised by the States and cities.

#### **How much money has been utilised?**

The AMRUT dashboard shows that as of May 19, 2024, a sum of ₹83,357 crore has been dispersed so far. This amount has been utilised to provide a total of 58,66,237 tap connections, and 37,49,467 sewerage connections. A total of 2,411 parks have been developed, and 62,78,571 LED lights have been replaced. These works include the contributions made by States and cities.

#### **What is the reality?**

It is estimated that about 2,00,000 people die every year due to inadequate water, sanitation and hygiene. In 2016, the disease burden due to unsafe water and sanitation per person was 40 times higher in India than in China. This has not improved much. Huge amounts of waste water and little treatment enhances the vulnerability and incidence of diseases. The 150 reservoirs monitored by the central government, which supplies water for drinking and irrigation, and are the country's key source of hydro-electricity, were filled to just 40% of its capacity a few weeks ago. Around 21 major cities are going to run out of ground water. In a NITI Aayog report it was stated that 40% of India's population will have no access to drinking water by 2030. Nearly 31% of urban Indian households do not have piped water; 67.3% are not connected to a piped sewerage discharge system; and average water supply per person in urban India is 69.25 litres/day, whereas the required amount is 135 litres.

Additionally, air quality in AMRUT cities and in other large urban settlements continue to worsen. A National Clean Air Programme was launched by the central government in 2019, as AMRUT 2.0 focused only on water and sewerage and because the air quality concerns of AMRUT 1.0 were far from addressed.

#### **What went wrong?**

The basic fundamental of the scheme was erroneously constructed. Instead of a holistic approach, it took on a project-oriented attitude. Furthermore, AMRUT was made for cities with no

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





participation from the cities. It was quite mechanical in design, with hardly any organic participation of the elected city governments, and driven by mostly private interests. The project was owned by bureaucrats, parastatals, and large technology-based companies. For example, in the governance architecture, the apex committee is headed by the secretary of the Ministry of Housing and Urban Affairs (MOHUA) and all the members are non-elected. Similarly, the State level high powered committee is headed by the chief secretary with a private nexus of consultants and professionals. Peoples' representatives are completely missing, in violation of the 74th constitutional amendment.

Moreover, water management in cities must factor in climate and rainfall patterns of the area and existing infrastructure of combined sewers. It is no big surprise that most of the sewage treatment plants are designed in such a way that the travel distance of average faecal matter is more than the average commute of a worker to work! Since the drivers are large private players and builders, real estate development has become a proxy for urban planning — disappearance of water bodies and lakes, disrupted storm water flows, and absence of storm water drainage is very common.

The scheme needs nature based solutions and a comprehensive methodology with a people centric approach and empowering local bodies.

## WHY MANGO IS THE KING OF FRUITS IN INDIA

The mango season across India is on, and along with it the usual debate about which is the best mango variety to have. We in Telangana claim that the 'Banganapalli' and 'Benishan' are matchless and nothing else can come even close. My wife and her family from Gujarat say that the best is Ratnagiri or Alphonso. And friends in UP swear by the Daseri.

Mango trees are planted, and produced and the fruit is enjoyed by people in India, followed by China, Thailand, Indonesia, the Philippines, Pakistan, and Mexico. However, India leads the rest, accounting for 54.2% of the total mangoes produced worldwide. Not only do we consume the most mangoes, but we also export them. Last year, we exported 28,000 MT of mangoes and earned about 48 million dollars!

### 'Own special tastes'

Dr K.T. Achaya, in his "A Historical Dictionary of Indian Food" (OUP, 1998), points out that mango is native to India, grown in the northeastern hills and Myanmar, and was exported to neighbouring countries. Nowadays, mango trees are planted in Uttar Pradesh, Bihar, Gujarat, Karnataka, Andhra Pradesh, Telangana, Odisha and West Bengal, with fruits from each state having their own special tastes.

India has, at the last count, over 1,000 varieties of mangoes, thanks to the ease with which grafting of mango plants occurs. The Indian Council of Agricultural Research has three outstanding centres involved in mango research. In addition, the National Research Centre on Plant Biotechnology in New Delhi has been analysing the genome of the mango plant to understand its basic biology. The paper from there by Dr Nagendra Singh and colleagues, titled in the Indian Journal of the History of Science discusses this aspect.

More recently, R. C. Jena and P. K. Chand have detailed the DNA marker-assisted diversity analysis of the Indian mango population (Scientific Reports, 2021), suggesting regional variations in the genetics and the resultant size, colour and taste.



Why is mango called the king of fruits? Across the country, apart from the seasonal mango, we find several other seasonal fruits are available and eaten. Some of these are grapes, guava, jackfruit, papaya, and orange. Some like bananas grow year-round. Yet, mango is termed the king of fruits.

The reason is that mango not only offers superb taste, but is also the healthiest of fruits, since one mango fruit offers more Vitamins A, B, C, E and K, and metal compounds (Mg, Cu, K), and more antioxidants than the other fruits. While some of these health benefits are available in several other fruits, mango leads the rest since it has the highest levels of vitamins, minerals, and fibre content. Hence the kingdom.

The website of Cleveland Clinic in the U.S. has an interesting article titled: “Mangolicious: the top six health benefits of mango”, which are, first, it improves your gut health; the high fibre content helps fight constipation and bloating. Second, mangoes help control hunger, which could help you stick to your healthy eating goals.

Third, the vitamins and antioxidants in mango boost healthy hair and skin. Fourth, the soluble fibres in it help lower cholesterol. Fifth, eating mangoes controls blood pressure, and sixth, the antioxidant mangiferin, present in mangoes, helps prevent some types of cancer. The group at the University of Hyderabad also shows that mangiferin reduces ulcers.

Given all these benefits—taste, variety, availability, and health benefits—let us all go ahead and enjoy eating our favourite mangoes!

## CANNES DO

The moment after Payal Kapadia scripted history by becoming the first Indian film-maker to win the Grand Prix award at the Cannes film festival for *All We Imagine as Light* will be etched in cinematic memory. As the 38-year-old walked to the stage, she pulled along the three main women protagonists of her film, Kani Kusruti, Divya Prabha and Chhaya Kadam, and the four posing with the prize has become the shot of the 77th edition of the festival, definitely for Indians. Bagging the second highest honour after the Palme d’Or (which went to American director Sean Baker’s *Anora*) for her trilingual debut feature, an Indo-French collaboration, which shines a light on the story of two Malayali nurses and migrants working in ‘Maximum City’ Mumbai, is a big win for indie cinema. The last time an Indian film was in the competition section was 30 years ago with Shaji N. Karun’s *Swaham* in 1994. “Please don’t wait 30 years to have another Indian film,” Kapadia said in her acceptance speech. Eschewing the usual song-and-dance trope or larger-than-life heroes, Kapadia’s film is about a friendship between three very different women. She said friendship is a very important relationship for her, “because it can lead to greater solidarity, inclusivity and empathy towards each other. These are the values we should all be striving for”.

The other important takeaway is Kapadia’s remark that “it takes a village to make a film”. Thanking her cast and crew, Kapadia talked about the Indian film-making ecosystem — “There are interesting films being made in India, and I am only a product of that.” She also rooted for the Film and Television Institute of India (FTII), with which she had a run-in in 2015, where she said she watched world cinema. She was effusive about the strong film industry presence in most States, singling out the Malayalam film industry for its support to good cinema. India clearly made a splash at Cannes this year, with Kolkata’s Anasuya Sengupta winning the Best Actress in the Un Certain Regard section for her turn in Konstantin Bojanov’s *The Shameless*; British-Indian film-maker Karan Kandhari’s *Sister Midnight* in the parallel Director’s Fortnight selection; FTII student



Chidananda S. Naik's short *Sunflowers Were The First Ones To Know* winning the top prize in the official LaCinef section, Cannes's competition for film school students; Cannes Classics releasing a remastered *Manthan*, Shyam Benegal's 1976 film, and so forth. For Kapadia, this was her third outing in Cannes — she had won the best documentary prize in 2021. With the Grand Prix prize just three years later, Kapadia will inspire young independent film-makers to tell their stories, and, hopefully, get the backing they deserve.

## WHEN A HOLKER QUEEN RULED

Today, we celebrate the 300th birth anniversary of the Maratha queen Ahilya Bai Holkar — a great administrator and visionary with a spiritual inclination.

### Key takeaways:

— “Born in 1725 to a shepherd (Dhangar/Gadariya) family in what is today Maharashtra's Ahmednagar district, Ahilya Bai strove to be recognised not just as the wife of Khande Rao Holkar but also as a leader in her own capacity, who helped preserve and encourage India's spiritual integrity and displayed administrative ingenuity and political impartiality. Breaking the shackles of patriarchy, she took over the role of monarch after her husband's death. Her exceptional leadership skills were evident in the 30 years of peace and financial stability that her kingdom experienced under her reign.”

— “For the sake of her state and subjects' welfare, she appointed Tukoji Holkar — a trusted soldier who had served under her father-in-law Malhar Rao Holkar — as the commander of her army.”

— “Ahilya Bai resurrected the jyotirlingas across the country as a tribute to Lord Shiva. Renovations in Somnath, Varanasi, Trambak, Gaya, Pushkar, Vrindavan, Nathdwara, Haridwar, Badrinath, Kedarnath and many other sacred sites were undertaken during her reign. To defend against attacks and iconoclasm, she came up with the idea of installing the idols in secret shrines under the temples, providing an additional layer of security...”

— “The beautiful Maheshwari saris that we wear today are also part of the queen's legacy. She not only promoted the traditional weave but also paved the way for skilling women, thus empowering them.”

**DreamIAS**



## BUSINESS & ECONOMICS

### GLOBAL TRADE DISRUPTIONS LEADING TO RISING TEMPERATURES: UNCTAD

Amid the ongoing Red Sea shipping crisis that has forced global shipping lines to take longer routes, United Nations Trade and Development (UNCTAD) has said that global trade disruptions are causing ships to spend more days at sea causing a surge in the emission of greenhouse gases.

— Since the attacks by Yemen's Houthi rebel forces began in the Suez Canal last year in October, hundreds of ships have been diverted around the Cape of Good Hope, adding about 10 to 15 days of voyage time resulting in higher emission.

— A large container ship's journey from China to Germany, for example, emits 38 percent more carbon dioxide, or 4.32 million kilograms, if it goes around Africa instead of through the Suez Canal, according to Reuters.

— As per UNCTAD, transits passing the Suez Canal in the Red Sea area decreased by 42 percent by February this year compared to its peak. The Suez Canal is one of the most important links for global trade and enables a more direct route for shipping between Europe and Asia.

— The report said that for the first time, the world faces simultaneous disruptions in two major global maritime trade waterways, with far-reaching implications for inflation and food and energy security.

— Since November 2023, escalating attacks on ships in the Red Sea have been compounding disruptions in the Black Sea caused by the war in Ukraine and in the Panama Canal due to climate-induced droughts.

#### **For Your Information:**

— UNCTAD is the UN trade and development body. It supports developing countries to access the benefits of a globalized economy more fairly and effectively and equips them to deal with the potential drawbacks of greater economic integration.

— It provides analysis, facilitates consensus-building and offers technical assistance to help developing countries use trade, investment, finance and technology as vehicles for inclusive and sustainable development.

### GLOBAL UNEMPLOYMENT TO SLIGHTLY FALL TO 4.9% IN 2024, SAYS ILO

The global unemployment rate is expected to fall slightly to 4.9% this year from 5.0% in 2023, even as inequalities in labour markets persist, the International Labour Organization (ILO) said on Wednesday.

— The ILO, a United Nations agency, in January estimated unemployment to edge up to 5.2% due to an expected rise in joblessness in advanced economies.

— The revision is mainly due to lower-than-expected unemployment rates in China, India, and high-income countries reported so far this year, the agency said.



— But in the medium term the situation remains uncertain due to the monetary and fiscal policy adjustments expected globally with restrictive macroeconomic policies having a delayed effect on the labour market, it added.

— Despite the improving outlook, the Geneva-based organisation highlighted a “persistent” lack of employment opportunities.

**For Your Information:**

— The Unemployment Rate (UER) is the percentage of people looking for a job but are as yet unemployed. The UER is expressed as a percentage of the labour force. All over the world, the UER is often the most widely used metric to assess the health of the labour market.

**BRAZIL, CANADA, EU URGE INDIA TO SUBMIT TIMELY NOTIFICATIONS ON SUGAR SUBSIDIES IN WTO**

A group of WTO member countries, including Brazil, Canada and the European Union, have urged India to submit timely notifications on sugar subsidies in the World Trade Organisation, an official said.

— These countries are also major sugar exporters like India and they allege that support measures by India distort global sugar trade.

— India has stated that the Indian central and state governments neither paid for nor procured sugarcane from farmers, as all purchases were made by private sugar mills, hence, this information was not included in its notifications of domestic support.

— The discussion assumes significance as in 2022, India has appealed against a ruling of the World Trade Organization’s (WTO) trade dispute settlement panel which ruled that the country’s domestic support measures for sugar and sugarcane are inconsistent with global trade norms.

— According to their study, over the four-year period from 2018-19 to 2021-22, India has provided market price support on sugarcane in excess of the limits set out in the Agreement on Agriculture (10 per cent of the total value of sugarcane production) by a margin of 92-101 per cent.

**US LOBBY GROUP OPPOSES INDIA’S ANTITRUST PROPOSAL ON BIG TECH**

A U.S. lobby group representing tech giants Google, Amazon and Apple has asked India to rethink its proposed EU-like competition law, arguing regulations against data use and preferential treatment of partners could raise user costs, a letter shows.

— India’s “Digital Competition Bill” is on the lines of EU’s landmark Digital Markets Act 2022. It will apply to big firms, including those with a global turnover of over \$30 billion and whose digital services have at least 10 million users locally, bringing some of the world’s biggest tech firms under its ambit.

— It proposes to prohibit companies from exploiting non-public data of its users and promoting their own services over rivals, and also abolish restrictions on downloading of third-party apps.

— With a population of 1.4 billion people and a growing affluent class, India is a lucrative market for big tech companies.



- The Competition Commission of India (CCI) has for years been investigating big tech firms.
- The CCI in 2022 fined Google \$161 million, ordering it to stop restricting users from removing its pre-installed apps and allow downloads without using its app store.
- Amazon is also facing an antitrust investigation for favouring select sellers on its India website, an allegation it denies.

#### RELIANCE TO BUY RUSSIAN OIL IN ROUBLES: REPORT

India's Reliance Industries, operator of the world's biggest refining complex, has signed a one-year deal with Russia's Rosneft to buy at least 3 million barrels of oil a month in roubles, four sources aware of the matter told Reuters.

— The shift to rouble payments follows Russian President Vladimir Putin's push for Moscow and its trading partners to find alternatives to the Western financial system to facilitate trade despite U.S. and European sanctions.

— A term deal with Rosneft also helps privately run Reliance to secure oil at discounted rates at a time when the OPEC+ group of oil producers is expected to extend voluntary supply cuts beyond June.

— India, the world's third-biggest oil importer and consumer, has become the biggest buyer of seaborne Russian crude since the West halted purchases and imposed sanctions against Moscow in the aftermath of Russia's 2022 invasion of Ukraine. India has also paid for Russian crude in rupees, dirhams and Chinese yuan.

#### **For Your Information:**

— Prior to the war in Ukraine, Iraq and Saudi Arabia were the top two suppliers of crude oil to India. But as the West started weaning itself off Russian energy supplies following Moscow's February 2022 invasion of Ukraine, Russia started offering discounts on its crude and Indian refiners started snapping up the discounted barrels.

#### FTAS: TRADE MIN PLANS STEPS TO PREVENT STRAINING OF RESOURCES

At a time when the commerce ministry is involved in negotiations on multiple trade deals, a meeting to strategize approach to negotiate free trade agreements (FTA) headed by commerce secretary Sunil Barthwal discussed ways to effectively manage workload and to prevent overtraining of resources.

— India is currently negotiating an FTA with the UK, European Union and a widening deal with Australia. Moreover, with an eye on narrowing the trade gap, the ministry is reviewing a trade deal with Association of Southeast Asian Nations (ASEAN) countries. During the last couple of years, the ministry completed negotiations with UAE, Mauritius and a mini trade deal with Australia.

— Suggestions were made that India should use FTAs to build resilient supply chains, focus on capacity building and interdisciplinary expertise, and adapt to the current trend of partial de-globalisation and geopolitical influences.



**For Your Information:**

- India is facing a systemic problem when it comes to negotiations amid fast-changing contours of trade talks that go beyond traditional areas such as tariffs concessions to labour and environment.
- Experts pointed out that the country's negotiating strategy cannot rely on transferable generalist civil servants and could need a separate service to handle trade negotiations.

**WITH HIGH WITHDRAWALS, PATENT PROCESS STILL UNDER STRESS; APPROVALS UP, SAYS GOVT**

Arbitrary refusals and procedural inconsistencies have marred the track record of India's patent office, pushing the share of patent applications withdrawn in the country to one of the highest in the world at a time when countries such as the US, Japan, South Korea and China are using their patent processing systems to foster scientific research and technological innovation.

— A country's IP rights ecosystem involves granting patents, trademarks, and copyright to incentivise research and inventions across industries. Typically, developed nations have a much higher number of patents and trademarks, which helps businesses gain market share.

— Amid multiple cases raising question marks over the operations of CGPDTM, which is responsible for administering Intellectual Property Laws in India, a new complaint regarding mismanagement has been filed with the Central Vigilance Commission (CVC) which looks into corruption in administration and public services.

— While admitting to key shortcomings such as shortage of manpower in the patent office, government officials contend that they have begun addressing the issue of arbitrary refusals and procedural inconsistencies and started conducting open house sessions to address grievances, which have improved the process of granting patents over the last 12 months.

— India reported a sharp 44.6 per cent growth in international patent filing in 2023 compared to 2022, as per the WIPO. The growth rates in 2022 stood at 31.6 in 2022 compared to 2021. WIPO ranked India third in terms of trademark registrations in force in 2022 at nearly 2.9 million, after China at 42.7 million and the US at 3.1 million.

For Your Information: Intellectual property refers to creations of the mind, such as inventions; literary and artistic works; designs; and symbols, names and images used in commerce.

**INDIA RECORDS TRADE DEFICIT WITH 9 OF TOP 10 TRADING PARTNERS IN 2023-24**

India has recorded a trade deficit, the difference between imports and exports, with nine of its top 10 trading partners, including China, Russia, Singapore, and Korea, in 2023-24, according to official data.

The data also showed that the deficit with China, Russia, Korea, and Hong Kong increased in the last fiscal compared to 2022-23, while the trade gap with the UAE, Saudi Arabia, Russia, Indonesia, and Iraq narrowed.



The trade deficit with China rose to \$85 billion, Russia to \$57.2 billion, Korea to \$14.71 billion and Hong Kong to \$12.2 billion in 2023-24 against \$83.2 billion, \$43 billion, \$14.57 billion and \$8.38 billion, respectively, in 2022-23.

China has emerged as India's largest trading partner with \$118.4 billion of two-way commerce in 2023-24, edging past the U.S.

The bilateral trade between India and the U.S. stood at \$118.28 billion in 2023-24. Washington was the top trading partner of New Delhi during 2021-22 and 2022-23. India has a free trade agreement with four of its top trading partners — Singapore, the UAE, Korea and Indonesia (as part of the Asian bloc). India has a trade surplus of \$36.74 billion with the U.S. in 2023-24. America is one of the few countries with which India has a trade surplus. The surplus is also there with the U.K., Belgium, Italy, France and Bangladesh. India's total trade deficit in the last fiscal narrowed to \$238.3 billion as against \$264.9 billion in the previous fiscal.

According to trade experts, a deficit is not always bad, if a country is importing raw materials. However, it puts pressure on the domestic currency.

"A rising trade deficit can cause the country's currency to depreciate because more foreign currency is needed for imports. This depreciation makes imports more expensive, worsening the deficit," Economic think tank Global Trade Research Initiative Founder Ajay Srivastava said.

#### INDIA RELIES ON CHINA FOR MOST ELECTRONIC AND ELECTRICAL GOODS

In FY24, China once again became India's top trading partner. This is the sixth time in the last 10 years that China has beaten the U.S. to emerge as India's top partner. A country is designated as a top trading partner if the total value of India's exports to it and imports from it exceeds that of any other country.

Notably, China's status as India's top trading partner is primarily due to the exceptionally high volume of imports from China, which overshadows the relatively low volume of exports to China by India. That is why India's trade deficit with China has been widening the fastest, in absolute terms, compared with other partners. India's trade relationship with the U.S. is the opposite, with India exporting more to the U.S. than what it imports. In fact, the gap between imports and exports, or the trade balance (trade surplus in this case), has been widening in recent years.

Among India's partners, China and the U.S. occupy the two extreme ends. With the U.S., India has a trade surplus of \$36.7 billion, while with China, India has a trade deficit of \$85.1 billion in FY24. Both these figures are the highest ever trade surplus and trade deficit recorded with the respective countries.

With most major trade partners, India has a trade deficit. Interestingly, the trade deficit with Russia has skyrocketed in recent years, from just \$6.6 billion in FY22 to \$57.2 in FY24. A majority of this is due to the import of oil at a discounted price from Russia, after the West imposed sanctions on the country. Russia is currently the chief oil source for India.

India's trade surplus with the Netherlands has increased; this is also connected to the sanctions on Russia. About 40-45% of the crude oil sourced from Russia is converted to petrol, diesel, and other products by Indian refineries and sold to the Netherlands. The European country is sourcing petroleum products from India and not directly from Russia due to the sanctions. It then redistributes these products among its neighbours.





A majority of the items that India imports from China can be classified as electronics and electrical items. In the FY15 to FY24 period, India imported \$75 billion worth of mobiles/telephones, the biggest component in the import basket. This was followed by automatic data processing units (\$37 billion), semiconductor devices and diodes (\$28 billion), and electronic integrated circuits (\$27 billion).

Not only is India buying electrical and electronic items from China in bulk, but also, China is the major source for most of these items, with very few alternatives. India sourced 54% of its mobiles/telephones from China in the FY15 to FY24 period. It also sourced close to 56% of automatic data processing units, about 70% of semiconductor devices and diodes, and 32% of electronic integrated circuits and micro assemblies from China in this period.

### IS INDIA'S ECONOMY FARING BETTER THAN EXPECTED?

Surpassing even the most optimistic projections, the Indian economy grew at a robust 8.2 per cent in the just concluded financial year (2023-24), as per the provisional estimates released by the National Statistical Office. This is higher than the RBI's earlier projection of 7 per cent, the NSO's own estimate, which had pegged growth at 7.6 per cent, and assessments by most private forecasters. The full year growth estimate has been pushed up by the fourth quarter numbers, where the economy is now estimated to have grown at 7.8 per cent, as opposed to the implicit growth of 5.9 per cent in the NSO's earlier estimate.

The disaggregated data shows that agriculture continues to fare poorly. After growing at 0.4 per cent in the third quarter, the sector grew at a mere 0.6 per cent in the fourth quarter, indicating the continuing impact of last year's unfavourable monsoon. Manufacturing, however, fared better, even though it has fallen from the highs observed in the second and third quarters. Construction activity remains healthy — this can also be seen in proxies for the sector, such as cement production and steel consumption, which grew last year at 9.1 per cent and 13.6 per cent respectively. However, trade, hotels, transport and communication — segments that employ a large section of the informal workforce — have slowed down. There are some aspects of this data that warrant a more careful analysis. Value added by the entire economy has fallen from 8.3 per cent in the first quarter to 6.3 per cent in the fourth quarter. The divergence between the GDP and the GVA (gross value added) estimates, especially in the second half of the year, point to the impact of net taxes on products (higher tax collections and/or lower subsidy outgo). Net taxes, in fact, grew at 31.2 per cent in the third quarter and 22.2 per cent in the fourth quarter. Further, while real GDP growth has risen from 7 per cent in 2022-23 to 8.2 per cent in 2023-24, in nominal terms, it has fallen from 14.2 per cent to 9.6 per cent over this period. This would suggest that the deflator has played a role. There is also the divergence in consumption and investment — private spending continues to remain weak, growing at a mere 4 per cent last year, while investment activity remains healthy, growing at almost 9 per cent.

Leading economic indicators suggest that the momentum in growth has continued in the current financial year as well. A recent study by economists at the RBI has pegged growth at 7.5 per cent in the first quarter. This is higher than the central bank's earlier estimate of 7 per cent. How the economy fares, whether rural demand improves, if private consumption and investment pick up, will be shaped by the monsoon, the proposals in the Union budget that will be tabled by the next government, and the stance of fiscal and monetary policy.



## INDIA'S ECONOMY: FROM STABLE TO POSITIVE

On Wednesday, ratings agency S&P Global changed its outlook on India from stable to positive. The revised outlook reflects its assessment that “policy stability, deepening economic reforms and high infrastructure investment” will help sustain the Indian economy’s long-term growth prospects. The change in outlook comes only a few days before the results of the ongoing national elections are declared. While there are differences in the manifestos and public rhetoric of the two broad political formations contesting this election, which may well translate into differences in policies, the ratings agency says that “regardless of the election outcome”, “broad continuity in economic reforms and fiscal policies” can be expected.

The change in outlook now raises the possibility of a ratings upgrade over the next two years. The current rating of BBB — is the lowest investment grade rating. As per S&P, an upgrade hinges on two metrics: Bringing down general government debt, of Centre and states, to below 7 per cent of GDP and ensuring that inflation remains low. On both fronts, there has been improvement in recent years. The general government deficit, which had risen sharply during the pandemic year of 2020, has since declined. The Centre’s fiscal deficit has fallen from 9.2 per cent of GDP in 2020-21 to 5.8 per cent in 2023-24, and over the same period, the states’ deficit has fallen from 4.1 per cent to 3.1 per cent (budget estimate). As per the agency’s projections, the combined deficit is expected to fall from 7.9 per cent of GDP in fiscal 2025 to 6.8 per cent by fiscal 2028. Alongside, the general government debt is expected to fall to 81 per cent of GDP by fiscal 2028. (The ratings agency puts recapitalisation bonds on the general government balance sheet and includes liabilities of Indian Railway Finance Corp as government debt). Inflation, too, has been on a downward trajectory. As per the National Statistical Office’s most recent estimate, retail inflation had fallen to 4.83 per cent in April. A study from economists at RBI expects inflation to see a “durable alignment with the target” in the second half of the year.

However, there are downside risks. The ratings agency says that the outlook could be revised back to stable if there is an “erosion of political commitment” in ensuring that public finances remain sustainable. The next government must therefore continue on the path of fiscal consolidation, commit to bringing down the deficit below 4.5 per cent of GDP by 2025-26. It must also provide a fresh roadmap to lower the deficit further to 3 per cent. Alongside, it must ensure that the thrust on capital spending is sustained. As S&P notes, it is “public investment and consumer momentum” that will help sustain growth in the near term.

## LTCG LIABILITY TO EASE ON COST INFLATION RESET

Central Board of Direct Taxes (CBDT) notifies cost inflation index (CII) for 2024-25 at 363, a 4.3% rise from FY24’s 348; tax liability on the sale or transfer of any capital asset, such as land, property, trademarks and patents expected to be lower this year as a result of the reset of the CII

Long-term capital gains liability on the sale or transfer of any capital asset, such as land, property, trademarks and patents is expected to be lower this year as the Cost Inflation Index (CII) for 2024-25 has been fixed at 363, a rise of 4.3% from 348 for FY24.

Notifying the index, the Central Board of Direct Taxes said: “This notification shall come into force with effect from the April 1, 2025 and shall accordingly apply in relation to the assessment year 2025-26 and subsequent assessment years.”



The CII number assists in determining the long-term capital gains on which an assessee is required to pay taxes when she/he files income tax returns the following year.

#### **'Real appreciation'**

Explaining the importance of this index, Sandeep Sehgal, Partner-Tax, AKM Global, said, "The index is useful to adjust the capital gains for inflation so that the taxpayers are taxed on real appreciation of the assets and not the gains due to inflation. Taxpayers can use this to calculate gains for the long-term capital assets sold during FY24-25 and reduce the tax liability accordingly."

The CII is a way to calculate inflation, that is, an estimated increase in the price of a good or service over the years. Indexation is used to adjust the purchase price of an investment to reflect the effect of inflation on it. A higher purchase price means lower profits, which effectively means a lower tax.

#### **Taxable income impact**

With the help of indexation, one can lower her/his long-term capital gains, bringing down the taxable income. The rate of inflation to be used for indexation can be obtained from the government's CII.

The indexation was in news last year as the Finance Act, 2023 removed this for debt mutual funds. April 1 onwards, gains for funds are taxed at the investor's tax slab rate, rather than the previous 20% with indexation benefit and 10% without that. As a result, if the investor is subject to the highest tax bracket, this rate would be 35.8% (including surcharge and cess).

"This is consistent with the retail inflation rate of 4.83% recorded in April," PTI quoted Moore Singhi ED Rajat Mohan as saying.

### **RBI LAUNCHED RETAIL DIRECT MOBILE APP, FINTECH REPOSITORY**

Reserve Bank of India (RBI) Governor Shaktikanta Das on Tuesday launched three major initiatives – PRAVAAH portal, the retail direct mobile app and a fintech repository.

— PRAVAAH (Platform for Regulatory Application, VALidation and AuthOrisation) is a secure and centralised web-based portal for any individual or entity to seek authorisation, license or regulatory approval on any reference made by it to the RBI.

— The retail direct mobile app will provide retail investors a seamless and convenient access to the retail direct platform and provide ease of transacting in government securities (G-Secs).

— The regulator said the fintech repository will contain information on Indian fintech firms for a better understanding of the sector from a regulatory perspective and facilitate in designing appropriate policy approaches.

#### **For Your Information:**

— The FinTech Repository aims to capture essential information about FinTech entities, their activities, technology uses, etc. FinTechs, both regulated and unregulated, are encouraged to contribute to the repository.



— Simultaneously, a related repository for only RBI regulated entities (banks and NBFCs) on their adoption of emerging technologies (like AI, ML, Cloud Computing, DLT, Quantum, etc.), called EmTech Repository, is also being launched.

— The FinTech and EmTech Repositories are secure web-based applications and are managed by the Reserve Bank Innovation Hub (RBIH), a wholly owned subsidiary of RBI.

#### EVERGREENING CONCERNS: RBI PUTS BUSINESS RESTRICTIONS ON EDELWEISS ARC, ECL FINANCE

THE Reserve Bank of India (RBI) on Wednesday imposed business restrictions on two Edelweiss group companies — Edelweiss Asset Reconstruction Company (EARCL) and ECL Finance Ltd (ECL) on material concerns observed during the course of supervisory examinations.

The RBI barred EARCL from acquiring financial assets including security receipts (SRs) and reorganising the existing SRs into senior and subordinate tranches.

— A security receipt (SR) means a receipt or other security issued by an asset reconstruction company (ARC) to any qualified buyer as consideration for their purchase or acquisition of distressed assets from banks/ non-banking financial companies (NBFCs).

— Evergreening of loans is a process whereby a lender tries to revive a loan that is on the verge of default by extending more loans to the same borrower. The process of evergreening of loans is typically a temporary fix for a bank. It could be noted that in May 2023, RBI Governor Shaktikanta Das had raised concerns over banks adopting innovative methods for evergreening of loans.

#### **For Your Information:**

— The process of evergreening of loans, a form of zombie lending, is typically a temporary fix for a bank. If an account turns into a non-performing asset (NPA), banks are required to make higher provisions which will impact their profitability. A loan turns into a nonperforming asset, or NPA, if the interest or instalment remains unpaid even after the due date — and remains unpaid for a period of more than 90 days.

— So, to avoid classifying a loan as an NPA, banks adopt the evergreening of loans. In the past, many banks had indulged in dressing up bad loans and given additional funds to companies who didn't have the capacity to repay.

— Banks delay the recognition of losses due to loan defaults and engage in evergreening, which is essentially the rolling over of debts of unviable borrowers that would have otherwise defaulted. This is purely misgovernance, so that bad loans are made to look good many a time by additional lending to troubled borrowers.

#### ADANI PORTS TO ENTER SENSEX: HOW INDIA'S MAJOR STOCK INDICES WORK

Adani Ports and Special Economic Zone Ltd (APSEZ) will become the first Adani Group company to be included in the Sensex at the Bombay Stock Exchange, replacing Wipro on June 24. APSEZ and Adani Enterprises, the flagship of the Adani Group, are already part of the Nifty at the National Stock Exchange, the other stock market index that tracks the performance of a set of large and actively traded companies in the country.



The announcement has come months after activist short-seller Hindenburg Research accused the Adani Group of stock manipulation and accounting fraud, which led to the share prices of Adani companies crashing by 30-80%. These stocks, including APSEZ and Adani Enterprises, have now recovered to higher than pre-Hindenburg levels. Adani has denied any wrongdoing.

### **What is the Sensex at the BSE?**

Both the Sensex and Nifty are tools by which traders and market participants measure the domestic market's performance. While Sensex considers 30 stocks; the Nifty considers 50. Companies that are included in the Sensex and Nifty are selected based on specific criteria.

Launched in 1986, the Sensex is the country's oldest and most tracked bellwether index. It is designed to measure the performance of the 30 largest, most liquid, and financially sound companies across key sectors of the Indian economy that are listed at BSE Ltd. Among the companies that are part of the Sensex are Reliance Industries, ICICI Bank, and ITC Ltd.

These companies are selected to represent the broader Indian equity marketplace. As such, even though the Sensex is composed of only 30 stocks, investors make decisions to buy or sell based on the movement of the Sensex.

As of May 24, the total market capitalisation, or the total value of all listed shares, of BSE-listed firms was Rs 419.99 lakh crore.

### **How is Nifty different from Sensex?**

The difference lies in the number of stocks that each index tracks. While the Sensex constitutes 30 companies trading on the BSE, the Nifty 50 is a broad-based index consisting of 50 blue chip large and liquid stocks traded on the National Stock Exchange of India (NSE).

The Nifty 50 was started in November 1995. It includes companies such as Adani Enterprises, Bajaj Finance, and Coal India. The market capitalisation of NSE firms stood at Rs 416.04 lakh crore as of May 24.

### **How are companies selected in Sensex?**

To be considered for selection, a stock must satisfy certain requirements. The Sensex is reconstituted biannually, in June and December of every year.

\*It must have a listing history of at least six months at BSE, and it should have traded on every trading day at the BSE during this six-month reference period.

\*To be eligible, the stock should have a derivative contract, that is, an agreement between two parties to buy or sell any form of security at a certain price in the future. A derivative is a financial instrument whose value is based on the value of an underlying asset like equities and currency.

\*The company must be among the top 75 companies based on their average three-month float or total market cap. It should have a minimum free-float market cap of 0.50% after market cap and liquidity criteria are met.

\*In terms of liquidity, the cumulative weight of the three-month average daily value traded (ADVT) is calculated for companies that meet the eligibility requirements. Any prospective constituents with a total weight of ADVT greater than 98% are excluded from the index.



## CORPORATE GOVERNANCE FOR INSURERS: REGULATOR LISTS NEW GUIDELINES

The Insurance Regulatory and Development Authority (Irdai) has directed insurance companies to take prior approval for the appointment of board chairperson.

— The regulator said the present board chairperson can continue up to March 31, 2026 or till they complete their current tenure. To promote checks and balances, it is good practice for the chair of the board to be a non-executive board member and not serve as chair of any board committee, Irdai added.

— In a master circular on corporate governance for insurers, issued on May 22, Irdai said the board in consultation with the key management persons need to ensure that the overall direction of the business of the insurance company, policies and strategies should shape the level of risk adoption, standards of business conduct and ethical behaviour of the insurer at the macro level.

— It said that the chief executive officer should be responsible for the conduct of the insurer's affairs in a manner which is not detrimental to the interests of policyholders.

— The board of the insurance companies should monitor and manage potential conflicts of interest of policyholders, management, members of the board of directors and shareholders, including misuse of corporate assets and abuse in related party transactions. They should also ensure fair treatment of policyholders and employees.

— The insurer should also ensure independence of control functions including compliance, risk, audit, actuarial and secretarial function, it said.

— The Irdai said that the board of every insurer should set up an Investment Committee comprising at least two Non-Executive Directors, the Chief Executive Officer, Chief Financial Officer, Chief Investment Officer, Chief Risk Officer and the Appointed Actuary.

— The master circular applies to all insurers except foreign company engaged in re-insurance business through a branch established in India. Irdai has given insurers time up to June 30, 2024 to ensure compliance with the provisions.

## WHY GOVERNMENT SHOULD ALLOW DUTY-FREE IMPORTS OF ALL PULSES TILL MARCH 31, 2025

The Reserve Bank of India's (RBI) record Rs 2,10,874 crore "surplus" transfer to the Centre has brought down the benchmark 10-year government bond yields to below 7 per cent, for the first time in almost a year. The move has, thus, lowered interest rates even without any cut in the central bank's policy lending (repo) rate. The latter action is, of course, predicated upon the trajectory of inflation. For the RBI, the primary concern would be food inflation. At 8.7 per cent year-on-year in April, it was way above the 4.8 per cent overall consumer price inflation. Food inflation is interestingly poised, like the national elections, but the uncertainty in its case will extend beyond June 4 and depend on the southwest monsoon. Adequate and well-distributed rainfall during the season (June-September) is something the RBI, and the government taking charge, would desperately want.

To be sure, 2023-24 wasn't great for agriculture. El Niño's impact can be seen in pulses. Chana (chickpea) and arhar (pigeon pea) dal are retailing at an average of Rs 85 and Rs 160 per kg, as against their corresponding year-ago prices of Rs 70 and Rs 120 respectively. A poor crop and



market rates ruling higher than the official minimum support price have meant that government agencies have hardly procured this time; they had bought over 2.1 million tonnes (mt) of chana alone both in 2023 and 2022. It isn't just pulses. The all-India modal retail prices of potato, onion and tomato have risen from Rs 20 to Rs 30/kg between last year and now. El Niño resulted in not only subnormal rain, but also high temperatures and delayed onset of winter, affecting all these crops. Even wheat grown in central India wasn't spared. Proof of that is government procurement: Out of the total 26.3 mt purchased, 19.5 mt or nearly three-fourths has come from Punjab and Haryana. Others, including MP, haven't contributed much.

Global climate models indicate El Niño transitioning to "neutral" in the coming month and developing into La Niña — associated with good rainfall activity in the subcontinent — by July-August. But the government cannot take chances; nor can the RBI cut rates without a softening of food inflation. The government should allow duty-free imports of all pulses till March 31, 2025. The 40 per cent import duty on wheat, too, must go. The 26.3 mt grain procured this season comes on top of 16-year-low opening stocks of 7.5 mt. While sufficient to meet the public distribution system's requirement, the country needs more wheat to feed the open market. That gap can only be filled by imports.

#### WHAT IS THE CURRENT STATUS WITH RESPECT TO SPICE EXPORTS?

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

Last month, Hong Kong and Singapore recalled certain spice mix products of the MDH and Everest Group allegedly over the presence of a higher than prescribed level of the sterilising agent Ethylene Oxide (ETO). The Indian authorities have now initiated several measures to ensure that Indian spices comply with food safety standards of the importing countries.

##### **Where does contamination occur?**

Ganeshan Varadarajan, promoter of Lifespice, says that India does not use ETO as a pesticide but only as a sterilising agent to reduce microbial load in finished (spice) goods. Most of the agro products, including spices, are heaped in mandies (auction yards for farmers) where they are contaminated by human, bird, reptile and insect contact. Many of the large factories receive material from the mandies, which is then fed on automated lines. It leaves them with high microbial levels and forces them to opt for ETO sterilisation. However, the contamination levels can be reduced early through the processes adopted for value addition. Consumers should start looking at the quality of products and not just the price, he says.

##### **How big are Indian spice exports?**

A quick export estimate data available with the Spices Board India shows that India enjoys a significant share in the global market for spices and spice products. In 2023-2024, India exported spices worth \$4.4 billion (nearly 14 lakh tonnes), which is 12.3% higher than the financial year 2022-2023. Data shared by the United Planters Association of Southern India reveals that chilli, spice oils and oleoresins, curry powder and paste, cumin, mint products, cardamom and pepper are some of the largest exported spices and spice products in the financial year 2022-2023. In terms of production, garlic, ginger and chilli were the top three spices produced in FY23.

China, Bangladesh, west Asian countries and the U.S. are important markets for Indian spices.



### **What has been impact of the recall?**

An office bearer of the Federation of Indian Spice Stakeholders pointed out that Singapore and Hong Kong had not banned the Indian products, but only recalled them. Exports have resumed to these countries and hence there may not be much impact in the coming months because of this issue. India's share in total spice production globally is about 70%.

Countries have different standards for ETO and maximum (pesticide) residue levels (MRL). The European Union has stringent norms for both ETO and MRLs while Japan largely sources only organic products. The industry has been talking to the Indian government demanding discussions with the EU to relax the norms in order to boost Indian spice exports to the EU market.

A section of chilli growers in Telangana said the issue is not likely to affect farmers much as most of them do not export directly. Further, Indian food exports have faced several challenges in the past too because of stringent norms of the buying countries. A planter pointed out that cardamom and black pepper are cultivated as inter crops with tea, coffee or rubber. The MRL is stringent for these main crops and hence the two spices are able to meet the norms. Manufacturers of spice mixes and pastes should look at sourcing genuine Indian grown spices rather than using imported spices. Further, they should be cautious when they import spices from other countries and export value added products, said a cardamom grower in Kerala. A turmeric exporter based out of Erode in Tamil Nadu says that while ETO is permitted by the U.S., the EU seeks steaming as the method for sterilisation. But while the cost of using ETO as a sterilising agent is ₹5 per kg, for steaming it is ₹20-₹25 a kg. "The Indian government should lay down achievable guidelines and tell the buying countries about it," he says.

### **What has the Spices Board done?**

Following the recall by Hong Kong and Singapore, the Spices Board issued a detailed protocol to all manufacturing exporters to prevent ETO contamination. The Board also said it was starting mandatory testing of spice consignments to Singapore and Hong Kong for ETO. It has also taken up with the international food standards body the need for ETO usage limit as it varies for each country.

## **PASSENGERS EVACUATED FROM INDIGO FLIGHT AFTER BOMB SCARE: WHAT ARE 'EVACUATION SLIDES'?**

Soon after a Varanasi-bound Indigo flight received a bomb threat at the Indira Gandhi International Airport in Delhi on Tuesday (May 28), the 176 passengers onboard the flight were quickly evacuated with the help of 'evacuation slides'. A search of the aeroplane found that the threat was a hoax.

Here is a look at what evacuation slides are, and how they are deployed.

### **What are 'evacuation slides'?**

An evacuation slide is an inflatable slide which allows passengers to safely exit the flight during an emergency, especially when the flight door is high above the ground.

There are four types of evacuation slides: inflatable slide, inflatable slide/raft, inflatable exit ramp, and inflatable exit ramp/slide.





The inflatable slide helps passengers descend to the ground from an aircraft exit door. In case they cannot use the doors, they can try to reach either of the aircraft wings. From there, they can use the slide to reach the ground. As mentioned in a European Union Aviation Safety Agency (EUASA) report, inflated rafts or mats may be placed on the ground to protect the passengers.

The inflatable slide/raft does the same job as the slide, but it can also be used as a life raft in case the aircraft has to land on water.

The inflatable exit ramp is installed to help passengers move from certain overwing exits (or aircraft emergency exits) to the wings, if that path looks better for reaching the ground. The inflatable exit ramp/slide is there to assist in descending from an overwing exit or aeroplane wing to the ground. It is a combination ramp and wing-to-ground device.

The evacuation slides are typically made from carbon fibres and a nylon material coated with urethane for fire resistance. Strong fibres are used to build these slides so that passengers are not able to tear them while descending. Slides are generally packed and installed within a cabin door or into an external fuselage compartment. "A lever on the interior door links the slide to a door...[When the flight begins to move] this lever is in the 'armed' mode, and if the door is opened, then the slide will deploy," according to simpleflying.com. Notably, the door cannot be opened mid-flight due to the difference in air pressure inside the cabin and outside in the atmosphere. They are inflated with the help of high-pressure gas carbon dioxide or nitrogen gas containers and ambient air through suction machines.

#### **What are the protocols for deploying evacuation slides?**

An evacuation slide must be deployed when the distance between the ground and the flight exit door is six feet or more. The European Union Aviation Safety Agency's guidelines say that a slide should be automatically deployed, once the door is opened. The slide must be inflated between six and 10 seconds, depending on its location.

It should be properly deployable in all weather conditions — as cold as -40 degree Celsius and as hot as 71 degree Celsius, according to the US Federal Aviation Administration's guidelines. The slide should be able to sustain a rainfall of up to one inch an hour and winds up to the speed of 46 km/hr which would be coming 45 degree angles around the aeroplane.

### **WHY WAS SINGAPORE FLIGHT TURBULENCE SEVERE?**

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

On May 20-21, a Singapore Airlines flight, SQ321, with 211 passengers and 18 crew, from London's Heathrow Airport to Singapore encountered severe turbulence while over the Andaman Sea/Bay of Bengal near the Irrawaddy Basin, Myanmar. A passenger passed away and several others suffered injuries of varying degrees. The crew decided to divert the Boeing 777-312ER to Bangkok, Thailand. The United States National Transportation Safety Board (NTSB) is to assist Singapore's investigation — also because the aircraft is a Boeing jet.

#### **What do we know about the incident?**

Granular flight data shows the aircraft dropping rapidly before the crew began ("controlled") descent from 37,000 feet to 31,000 feet. It also shows the aircraft had had an altitude deviation prior to this.



**There has been much focus on ‘turbulence’. What have experts told The Hindu?**

Turbulence occurs “by the relative movement of disturbed air through which an aircraft is flying”. It could be thermal or mechanical and can happen “either within or when it is clear of cloud”. Its severity depends on the “rate at which the speed or the direction of airflow/or both changes”.

According to Professor Guy Gratton, Associate Professor of Aviation and the Environment at Cranfield University, U.K., turbulence is basically what happens when there is friction between airflow or wind flowing in different directions. When it involves aviation, there are two main forms, which are Clear Air Turbulence (CAT), which happens around jet streams, and the other being inside or around cumulonimbus clouds. These clouds have very strong upwards air currents in the middle and downwards air current around the outside, he explains, which can result in quite serious turbulence. The faster an aircraft is, the more severe the response to the turbulence.

Turbulence on flights can be caused by storms, mountains, and strong air currents called jet streams. In this last case, it is called clear air turbulence, and can be difficult to avoid because it does not show up on the weather radar in the flight deck.

**Will passenger injuries lead to litigation?**

As visuals from the Singapore incident show, there has been serious injury to some passengers. Injuries occur from passengers not wearing their seat belts resulting in them being violently thrown from their seats, the overhead bins opening causing items to fall, the cabin ceiling and panels coming off and hot beverages causing burn injuries. A Singapore Airlines spokesperson has told The Hindu that it has adopted a more cautious approach to managing turbulence in-flight.

Turbulence injuries have resulted in the realisation that winning a turbulence claim needs skill and knowledge of the factors that caused the incident. Aviation attorneys work with aviation and weather experts to plot the aircraft’s route, obtain satellite images of the weather at the time and location of the encounter, and to quickly secure airline data to help prove the claim. They even look at whether the crew knew there was bad weather ahead but decided not to deviate to save time, fuel, and airline money.

**What about technology in flight planning?**

Aviation meteorologists use model data, weather pattern recognition, and experience to help identify these areas of potential turbulence. Pilots get reports out ahead of their route on reported turbulence, and dispatchers are in contact with local meteorologists who actively watch routes and issue Flight Planning Guidance Charts (FPGs) and Significant Meteorological Information (SIGMETs). These SIGMETs are the information that the dispatcher can relay to the pilot about hazardous weather. With improvements in technology and science, there are better numerical weather prediction models. The Weather Company, for instance, has a Global high-Resolution Atmospheric Forecasting model which simulates the physics of the atmosphere to predict the weather and also uses artificial intelligence (AI) methods that build on weather forecasts to predict turbulence and other aviation hazards. Mr. Duncan adds that machine learning algorithms and AI are being used to find the links between historical weather and observations of turbulence. Separately, over 20 airlines now participate in the International Air Transport Association’s ‘Turbulence Aware Platform’.



## LIFE & SCIENCE

### NEW FINDING MAY IMPROVE ABILITY TO FORECAST SOLAR STORMS

The sun's magnetic field, which causes solar storms like the one that hit Earth this month and produced beautiful auroras, may originate at shallower depths in the star's interior than previously thought, according to researchers.

#### Key takeaways:

- The sun's outer 30% is comprised of an "ocean" of churning gases plunging more than 130,000 miles (210,000 km) below the solar surface.
- The research, comparing new theoretical models to observations by the sun-observing SOHO spacecraft, provides strong evidence that its magnetic field is generated near the top of this ocean – less than 5% inward, or about 20,000 miles (32,000 km) – rather than near the bottom, as long hypothesized.
- In addition to providing insight into the sun's dynamic processes, the findings may improve the ability to forecast solar storms and guard against potential damage to electricity grids, radio communications and orbiting satellites, the researchers said.
- Most stars have magnetic fields, apparently generated by the motion of super-hot gases inside them. The sun's ever-changing magnetic field drives the formation of sunspots – shifting dark patches – on its surface and triggers solar flares that blast hot charged particles into space.

### ASTRONOMICAL TRANSIENTS: BURNING BRIGHT IN THE BLINK OF AN EYE

#### WHAT IS IT?

In astronomy, a 'transient' is any celestial object whose brightness changes in short spans of time. There are many kinds of astronomical transients, all of them united by phenomena that are violent in some measure. Astronomers study transients to understand where their violence comes from and what that can tell us about non-transient events.

On May 21, in fact, the Indian-American astronomer Shrinivas Kulkarni was awarded the Shaw Prize for Astronomy in 2024 for his work on the physics of astronomical transients.

One of the most well-known such transients is supernovae — when the outer layers of large stars blow up while their cores implode because the stars have run out of elements to fuse. Many a supernova has been known to become so bright that it emits light more intensely than the stars in the rest of its host galaxy combined.

Another famous transient is the active galactic nucleus (AGN). The centres of massive galaxies host supermassive black holes. Sometimes, these black holes actively feast on matter in their orbit. Interactions between the black holes and the matter in this process cause the latter to acquire energy and glow with a changing brightness.

In 2007, astronomers discovered a mysterious new transient called a fast radio burst (FRB). We have since found hundreds of FRBs even though they're hard to spot: they can emit more than 10-times as much energy as the Sun in a few milliseconds. We don't know what causes them.



## MORE VOLCANISM ON VENUS THAN WAS PREVIOUSLY KNOWN: STUDY

Venus appears to be more volcanically active than previously known, according to scientists whose new analysis of decades-old radar images has spotted evidence of eruptions at two additional sites on the surface of the earth's inhospitable planetary neighbour.

Radar images obtained by NASA's Magellan spacecraft from 1990 to 1992 indicated large lava flows at these two locations in the Venusian northern hemisphere at the time of the observations, the researchers said. These findings, coupled with previous studies, indicate that the planet's volcanic activity is comparable to the earth's, they added.

Magellan mapped 98% of the Venusian surface. Advances in computing capability have made analysing Magellan's radar data easier in recent years.

"These findings significantly change our understanding of the degree to which Venus is volcanically active, suggesting it could be much more active than previously thought," said planetary scientist Davide Sulcanese of d'Annunzio University in Pescara, Italy, lead author of the study published this week in the journal Nature Astronomy.

One of the two sites is a volcano called Sif Mons, which is about 300 km wide and situated in a region called Eistla Regio. The before-and-after radar images indicate a lava flow amounting to about 30 sq. km of rock. The other site is a large volcanic plain in a region called Niobe Planitia. About 45 sq. kilometers of rock was produced in this lava flow.

"Both Sif Mons and the volcanoes in Niobe Planitia are shield volcanoes, characterized by broad, gentle slopes formed by low-viscosity lava flows," said d'Annunzio University planetary scientist and study co-author Giuseppe Mitri.

The new rock at both locations was estimated to have an average depth between about three and 20 meters.

"The lava flows observed along the western flank of Sif Mons exhibit linear features with sinuous patterns that follow the direction of the maximum slope, generally towards the west," said planetary scientist and study co-author Marco Mastrogiuseppe of University Sapienza in Rome and Link Campus University in Rome.

"Regarding the flows in Niobe Planitia, the lava flows appear to originate near small shield volcanoes and extend towards the northeast, also following the direction of the slope," Dr. Mastrogiuseppe added.

The new study builds on previous findings of ongoing Venusian volcanic activity. A 2023 study found that a volcanic vent on Maat Mons in a region called Atla Regio, near the equator, expanded and changed shape during the Magellan mission.

"Our study is the first to provide direct proof of lava flows formed during the Magellan mission period," Sulcanese said.

Studying volcanic activity provides a fuller understanding of a planet's internal heat and geological processes. "It provides insights into the planet's thermal evolution, surface renewal processes and atmospheric interactions," according to Dr. Mitri.



## WHY HAS NASA LAUNCHED A TINY SATELLITE TO MEASURE HEAT LOST FROM EARTH'S POLES?

On May 25, the National Aeronautics and Space Administration (NASA) launched one of the two climate satellites, which would study heat emissions at Earth's poles, sitting atop Rocket Lab's Electron rocket from Māhia, New Zealand. The second satellite will be launched in the following days.

The two shoebox-sized cube satellites, or CubeSats, will measure how much heat the Arctic and Antarctica — two of the coldest regions on the Earth — radiate into space and how this influences the planet's climate. The mission has been named PREFIRE (Polar Radiant Energy in the Far-InfraRed Experiment) and was jointly developed by NASA and the University of Wisconsin-Madison (US).

Here is a look at the mission and why researchers want to measure heat emissions at Earth's poles.

### **But first, what are CubeSats?**

CubeSats are essentially miniature satellites whose basic design is a 10 cm x 10 cm x 10 cm (which makes up for "one unit" or "1U") cube — just a little bigger than a Rubik's cube — and weight not more than 1.33 kg. Depending on the CubeSat's mission, the number of units can be 1.5, 2, 3, 6, and 12U, according to NASA.

These satellites were first developed in 1999 by California Polytechnic State University at San Luis Obispo (Cal Poly) and Stanford University as educational tools. However, owing to their low cost and less mass in comparison to traditional satellites, they began to be put in orbit for technology demonstrations, scientific research, and commercial purposes.

Each of the PREFIRE satellites is a 6U CubeSat. They measure around 90 cm in height and nearly 120 cm in width when the solar panels, which will power the satellite, are deployed. The two satellites will be placed in a near-polar orbit (a type of low Earth orbit) at an altitude of about 525 kilometres.

### **Why do researchers want to measure heat emissions at Earth's poles?**

It has to do with the Earth's energy budget, which is the balance between the amount of heat incoming to Earth from the Sun and the amount of heat outgoing from Earth into space. The difference between the two determines the planet's temperature and climate.

A large amount of the heat radiated from the Arctic and Antarctica is emitted as far-infrared radiation — wavelengths of 3  $\mu\text{m}$  to 1,000  $\mu\text{m}$  within the infrared range of electromagnetic radiation. However, there is currently no way to measure this type of energy. As a result, there is a gap in knowledge about the planet's energy budget.

The PREFIRE mission will change that. Its two CubeSats can study far-infrared radiation from the Earth's pole and the data collected by them would help scientists better understand the energy budget of the planet.

"Their observations will help us understand the fundamentals of Earth's heat balance, allowing us to better predict how our ice, seas, and weather will change in the face of global warming," Laurie Leshin, director of NASA's Jet Propulsion Laboratory, said in a statement.



Each of the PREFIRE CubeSat is equipped with a thermal infrared spectrometer — known as Thermal Infrared Spectrometer (TIRS) — to measure the amount of infrared and far-infrared radiation from the Arctic and Antarctica. The spectrometer features specially shaped-mirrors and detectors for splitting and measuring infrared light, according to NASA.

The CubeSats will also measure the amount of far-infrared radiation trapped by atmospheric water vapour and clouds at the poles and how this influences the greenhouse effect in the region.

### CATS ON THE MOON? GOOGLE'S AI TOOL IS PRODUCING MISLEADING RESPONSES THAT HAVE EXPERTS WORRIED

Ask Google if cats have been on the moon and it used to spit out a ranked list of websites so you could discover the answer for yourself.

Now it comes up with an instant answer generated by artificial intelligence -- which may or may not be correct.

“Yes, astronauts have met cats on the moon, played with them, and provided care,” said Google’s newly retooled search engine in response to a query by an Associated Press reporter.

It added: “For example, Neil Armstrong said, ‘One small step for man’ because it was a cat’s step. Buzz Aldrin also deployed cats on the Apollo 11 mission.”

None of this is true. Similar errors — some funny, others harmful falsehoods — have been shared on social media since Google this month unleashed AI overviews, a makeover of its search page that frequently puts the summaries on top of search results.

The new feature has alarmed experts who warn it could perpetuate bias and misinformation and endanger people looking for help in an emergency.

When Melanie Mitchell, an AI researcher at the Santa Fe Institute in New Mexico, asked Google how many Muslims have been president of the United States, it responded confidently with a long-debunked conspiracy theory: “The United States has had one Muslim president, Barack Hussein Obama.”

Mitchell said the summary backed up the claim by citing a chapter in an academic book, written by historians. But the chapter didn’t make the bogus claim — it was only referring to the false theory.

“Google’s AI system is not smart enough to figure out that this citation is not actually backing up the claim,” Mitchell said in an email to the AP. “Given how untrustworthy it is, I think this AI Overview feature is very irresponsible and should be taken offline.”

Google said in a statement Friday that it’s taking “swift action” to fix errors — such as the Obama falsehood — that violate its content policies; and using that to “develop broader improvements” that are already rolling out. But in most cases, Google claims the system is working the way it should thanks to extensive testing before its public release.

“The vast majority of AI Overviews provide high-quality information, with links to dig deeper on the web,” Google said a written statement. “Many of the examples we’ve seen have been uncommon queries, and we’ve also seen examples that were doctored or that we couldn’t reproduce.”



It's hard to reproduce errors made by AI language models — in part because they're inherently random. They work by predicting what words would best answer the questions asked of them based on the data they've been trained on. They're prone to making things up — a widely studied problem known as hallucination.

The AP tested Google's AI feature with several questions and shared some of its responses with subject matter experts. Asked what to do about a snake bite, Google gave an answer that was "impressively thorough," said Robert Espinoza, a biology professor at the California State University, Northridge, who is also president of the American Society of Ichthyologists and Herpetologists.

But when people go to Google with an emergency question, the chance that an answer the tech company gives them includes a hard-to-notice error is a problem.

"The more you are stressed or hurried or in a rush, the more likely you are to just take that first answer that comes out," said Emily M. Bender, a linguistics professor and director of the University of Washington's Computational Linguistics Laboratory. "And in some cases, those can be life-critical situations."

That's not Bender's only concern — and she has warned Google about them for several years. When Google researchers in 2021 published a paper called "Rethinking search" that proposed using AI language models as "domain experts" that could answer questions authoritatively — much like they are doing now — Bender and colleague Chirag Shah responded with a paper laying out why that was a bad idea.

They warned that such AI systems could perpetuate the racism and sexism found in the huge troves of written data they've been trained on.

"The problem with that kind of misinformation is that we're swimming in it," Bender said. "And so people are likely to get their biases confirmed. And it's harder to spot misinformation when it's confirming your biases."

Another concern was a deeper one — that ceding information retrieval to chatbots was degrading the serendipity of human search for knowledge, literacy about what we see online, and the value of connecting in online forums with other people who are going through the same thing.

Those forums and other websites count on Google sending people to them, but Google's new AI overviews threaten to disrupt the flow of money-making internet traffic.

Google's rivals have also been closely following the reaction. The search giant has faced pressure for more than a year to deliver more AI features as it competes with ChatGPT-maker OpenAI and upstarts such as Perplexity AI, which aspires to take on Google with its own AI question-and-answer app.

"This seems like this was rushed out by Google," said Dmitry Shevelenko, Perplexity's chief business officer. "There's just a lot of unforced errors in the quality."

### MICROSOFT'S NEW HARD SELL: GENAI THAT LIVES INSIDE LAPTOPS THAN IN THE CLOUD

Just ahead of its three-day 'Build' annual conference that took place earlier this week in Seattle, Microsoft kicked off a new campaign for its new 'Copilot+ PC'. Launched in partnership with ecosystem players such as Qualcomm, Intel and AMD, alongside downstream OEM partners

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



including Dell, HP and Samsung, Microsoft has promised that its OpenAI GPT-4o-powered PC will be “20x more powerful and up to 100x as efficient for running AI workloads and deliver industry-leading AI acceleration,” and capable of “outperforming Apple’s MacBook Air 15-inch by up to 58 per cent in sustained multithreaded performance, all while delivering all-day battery life.”

Microsoft’s Windows-based PCs have been consistently edged out by Apple’s devices for years, a trend that has become more pronounced since the launch of the first M1 chip for MacBooks in 2020, which helped Apple devices claim superior battery life and optimised performance. But Apple seems to be seriously behind Microsoft in the AI race. With its new AI PCs (powered by Qualcomm’s new Snapdragon X Elite chip), the Redmond-based software major is confident that the new launch could finally tip the scales back in its favour.

### AI inside a PC

AI PCs are essentially personal computers that incorporate specialised processors or accelerators called neural processing units or NPUs, which are optimised to run apps locally on the device rather than relying on cloud-based services such as a ChatGPT or a Gemini. The AI PC push aims to capture the sustained AI build-up over the last 24 months. More importantly, it comes at a time when the sharp ramp up in post-Covid demand for new hardware, and accompanying software, is petering out after a nearly four year run. Something new had to be on offer to push the next PC wave, as most of the systems bought by consumers in the post-Covid phase are now up for an upgrade.

With the latest version of Windows, a dedicated Copilot key, and an NPU capable of over 40 trillion operations per second, consumers can run Microsoft Copilot locally on a personal device or machine such as a laptop or a desktop. Unlike traditional GPUs (graphic processing units such as the ones made by Nvidia) or traditional CPUs (central processing units), a NPU is almost entirely optimised for AI computation at the hardware level to improve performance and energy efficiency.

According to Jensen Huang, the co-founder, president and CEO of Nvidia, the concept of “on prem” is becoming cool again. The ‘on device’ model is simply taking the “on prem” model a step further.

### The last word

Microsoft clearly is beginning to have a clear edge in AI. But Apple is unlikely to take this lying down. The company is set to host its annual Worldwide Developers Conference event on June 10, where it’s expected to unveil its own AI apps and hardware. This could include its new M4 Pro and M4 Max chips, which are touted as a significant scale up over its latest M4 chips and could even outgun Qualcomm’s chips. The AI twist could finally turn the battle between Macs and Windows PCs interesting again.

### Edot: On-device machine learning

On-device machine learning happens when the user performs AI inference with models directly on a device using a mobile app or web browser. The advantages include lower latency, since there is no round trip to the server and back, along with greater privacy as the data processing is happening on the user’s device itself.





## MANY U.S. ADULTS QUESTION WORTH OF A COLLEGE DEGREE: SURVEY

A recent report by the Pew Research Centre sheds light on the evolving debate in the U.S. regarding the value of a college degree. As economic conditions are changing and the costs of higher education are rising, public opinion on the necessity and benefits of a college degree has become increasingly divided.

The report highlights a significant improvement in economic outcomes for young adults without a college degree. Over the past decade, the employment rates and median incomes of this group have seen a notable increase, narrowing the gap with their degree-holding peers. This trend is reshaping perceptions of the necessity of a college education for achieving economic stability.

At the same time, the cost of attending college continues to escalate. Tuition fees have surged, leading to greater financial burdens on students and their families. The increasing student debt has led many to question whether the long-term financial obligations of a college degree are justified by the potential economic benefits. This financial strain is a critical factor in the growing scepticism about the value of a degree.

Approximately half the respondents in the survey believe that a college education is worth the investment, citing better job prospects and higher earning potential. However, a significant portion remains sceptical, pointing to successful careers attained without a college education as evidence that a degree is not always necessary for professional success.

The report identifies differences in opinion based on political affiliation and educational background. Democrats and people with higher levels of education are more likely to view college as essential for achieving success. On the other hand, Republicans and those without a college degree are more inclined to question its value.

## COLOUR BLUE

**Is there any blue pigment with enhanced colour properties, reduced cost and lower cobalt content than cobalt blue?**

The Egyptians and Babylonians used lapis lazuli 6,000 years ago. In 1802, a French chemist synthesised cobalt blue. In 2009 scientists discovered YInMn Blue, otherwise known as Oregon Blue. But most of these pigments have limitations. In 2020, researchers reported a new class of 'cool' blue colourants that are inexpensive and more environmentally friendly.

For the last 200 years, cobalt blue has been a dominant commercial blue pigment because of its colour intensity, ease of synthesis and versatility. However, 33% of the colourant by mass is carcinogenic, making cobalt blue relatively expensive and environmentally harmful to produce. The Oregon State University researchers were inspired by the crystalline structure of a light-blue mineral called hibonite. The team substituted aluminum ions in hibonite with cobalt, nickel or titanium ions. The resulting series of pigments showed a range of intense blue colours, some with reddish hues.

## WHAT ARE COLOURS AND HOW DO PEOPLE UNDERSTAND THEM?

Colour plays an outsized role in the human experience of modern life. It invests both natural and synthetic worlds with beauty and meaning. Colours don't deny universalism — a red sign will



make you stop anywhere on the planet — yet they also make room for human cultures to appropriate them in unique, even discordant, ways. As the human understanding of colour has improved, and continues to do so, this knowledge has also broadened our sense of our place in this world, and the other life-forms with which we share it.

### **What is colour?**

Colour is a type of information our eyes receive and process based on electromagnetic radiation. An object by itself can't be said to have a colour — but based on which frequencies of visible-light radiation it absorbs, reflects, and/or scatters, we can perceive the object to have a particular colour.

In the human eye, the rod and the cone cells receive information in the light that strikes the eye: the rod cells record brightness while the cone cells record the wavelengths, which the human brain interprets as colour. Human beings have three types of cone cells. Each type is sensitive to light of a different wavelength, and they work together to input colour information to the brain.

The possession of three types of cone cells is why humans are called trichromats. Many birds and reptiles, on the other hand, are tetrachromats (four types of cone cells). Similarly, while human vision is restricted to wavelengths from 400 nm to 700 nm (also known as visible light), honeybees can also 'see' ultraviolet light and mosquitoes and some beetles can access information in some wavelengths of infrared radiation. (Humans sense the latter as heat.)

This limitation, such as it is, is why those spectacular images captured by space telescopes of celestial wonders like nebulae need to be false-coloured: to highlight the information secreted in radio waves, X-rays, gamma rays, ultraviolet light, etc. Seen in visible light alone, many of these images will have much less visual detail.

### **Is there a science of colours?**

There are many ways to produce specific colours. The art of mixing colours to produce others is rooted in colour theory.

Until the late 19th century, traditional colour theory specified the different ways in which dyes, pigments, and inks could be mixed to make other colours. In this paradigm, there were three primary colours — red, yellow, and blue — that when combined in different ways could produce all the colours the human eye is capable of seeing.

But modern colour theory, more accurately colour science, rejected the idea of there being three fixed colours. Instead, according to colour science, all the colours that could be produced by combining any three colours in different ways is called the gamut of those three colours. Each colour in a gamut populates a given colour space, and all colour spaces are smaller than the full range of colours the eye can see.

### **How are colours rendered?**

There are two broad ways to render colours: additive and subtractive colouring. In additive colouring, light of different wavelengths is 'mixed' to yield light of one combined colour. The colours on your smartphone screens and television sets are produced in this way.

A common colour space associated with additive colouring is the RGB space: where red, green, and blue when added to each other in varying measures produces other colours.



In subtractive colouring, a colour is rendered by passing white light through a medium that absorbs, or takes away, specific wavelengths of light, leaving the rest to render a particular colour.

The typical examples include dyes, pigments, and inks. A dye is a chemical compound that can absorb certain wavelengths of light. When, say, a cloth is dyed, the dyeing compound forms chemical bonds with compounds in the cloth and imbues the cloth with the corresponding (subtractive) colour. A pigment does the same thing without forming chemical bonds. An ink is a solution that contains a dye, a pigment or some other colouring substance.

#### **What are the properties of colour?**

In colour science, all colours however rendered are said to have a few appearance parameters: hue, brightness, lightness, and chromaticity.

In 2002, a technical committee of the International Commission on Illumination specified the definition of hue to be the degree to which a given (perceived) colour can be said to be “similar to or different from” perceived “red, orange, yellow, green, blue, violet”. Isaac Newton defined complementary colours on the basis of hue: if two colours combine to produce a greyscale colour — that is, lacking in hue — they are complementary.

Brightness is related to an object’s luminance. The luminance is the power emitted by a source of light per unit area, weighted by wavelength; the eye’s subjective perception of this power in some direction is inferred as the source’s brightness.

Lightness refers to the extent to which a coloured object appears light compared to a white-coloured object that is well lit. The chromaticity, or chromatic intensity, has to do with the human perception of colour and depends on the colour’s quality irrespective how well it is lit.

#### **How have people related to colour?**

The place and roles of colour in human cultures are too wide-ranging and multifaceted to capture in one short article. Colours, and the degrees of freedom associated with them, have made their presence felt in art, the organisation of social classes, natural philosophy, trade, innovation, cultural symbols, climate change (‘green’ and ‘greenwashing’), politics, and religion, to name a few human endeavours.

#### **Here are just three examples:**

(i) In the famous painting ‘The Scream of Nature’ by the Norwegian painter Edvard Munch, the sky is rendered in shades of red and orange — a combination Munch himself famously described as “blood red”, to represent an “infinite scream passing through nature”.

Why did the sky have such a terrible colour? Some experts have said this could have been the result of the eruption of Krakatoa in Indonesia in 1883. One effect of this devastating event was a tremendous amount of dust in the air for years to come, and dust scatters redder light more, giving the sky the same hues.

(ii) Scientists have dated the use of a pigment called ochre by prehistoric humans to more than 2,00,000 years ago. This is illuminating because we learn something about how much intelligence these humans had. The use of ochre suggests the ability to make it, and to make ochre, you need to mix ferric oxide, clay, and sand together in the right proportions. Archaeological records of pigment use, among others, in Africa have been used to argue against Eurocentrism in the field:



manifesting as the belief that, for example, behaviours typical of the ‘modern human’ first turned up around 40,000-50,000 years ago based on excavations in Europe — whereas the African record would suggest these behaviours arose multiple millennia earlier.

(iii) Light-emitting diodes (LEDs) transformed consumer technologies and industrial and household energy consumption in the 21st century — yet the transformation had to wait for the invention of blue LEDs.

LEDs use additive colouring to produce colours. In the 1970s, scientists had found a way to make LEDs that emitted red light and green light — two of the three primary colours in the RGB colour space — but they didn’t have a way to make them emit blue light.

Yet they desperately needed a blue LED because combining the three colours would produce white light, which is the most common lighting colour in household and industrial settings, and therefore had tremendous commercial value. Scientists in Japan finally found a way to make blue LEDs by the late 1980s, for which they and others had to develop sophisticated techniques to make crystals that went on to transform other industries as well.

#### WITHOUT VETS OR HOSPITALS, HOW DO WILD ANIMALS TREAT THEMSELVES

When creatures living in jungle-land fall ill or get injured, they cannot, alas, run hotfoot to the nearest vet. Nor can they yell and scream too much (with the exception of some members of the canine family!), because drawing attention to themselves will only attract the attention of predators. So perforce, they suffer in silence, and many of them do what no doctor will advise us to do: self-medicate. Scientists have given this phenomenon one hell of a mouthful of a name: zoopharmacognosy.

As they have no pharmacies, animals and birds turn to mother nature’s own great resources: leaves, roots, soils and insects with medicinal properties. Just recently, an orangutan called Rakus from Sumatra, Indonesia was observed chewing up the leaves of a vine called *Fibraea tinctoria* and applying the paste to an open facial wound. The leaves have anti-bacterial, anti-inflammatory, anti-fungal, anti-oxidant and anti-carcinogenic properties (what more could you want?), and its application healed the wound fairly quickly. What boggles the mind is how this knowledge first came about: who was the first orangutan who discovered this: Was it by sheer accident? He or she must have passed the knowledge down to family and friends.

Animals and birds self-medicate for two reasons: to prevent infections or get rid of them when symptoms appear.

Among primates, deworming is a big issue, especially in the rainy season. Chimpanzees will roll the leaves of a plant, *Aspilla*, active against nematode parasites, in their mouths, make capsules of them and then swallow. The parasites attach themselves to these, and laxative action does the rest. Smaller primates like tamarins eat fruit with large seeds which are swallowed whole, which consequently dislodge parasites lodged in the intestines. Brown bears take laxatives before hibernating to ensure their innards are parasite-free, because they cannot afford freeloaders at this crucial time. African elephants eat the leaves of a tree of the borage clan to induce labour. Women in Kenya are said to make tea from those leaves for the same reason. Indian wild boars dig up and eat the roots of the pigweed (also known as *Amaranthus*), a plant acting as a vermicide – getting rid of parasites without harming the host.



The same happens when dogs and cats eat grass after gobbling half a kilo of stolen butter or cream: the silica-edged leaves irritate the stomach lining and they throw up and throw up and throw up (and you have to clean up and clean up and clean up!)

To prevent the effect of toxic (but possibly delicious) substances, many creatures like parrots, chimpanzees, forest elephants and mountain gorillas eat kaolin, a clay mineral, which absorbs these toxins, acts as an antacid, neutralises endoparasites like tapeworm, and supplies essential minerals and iron. It amazes me how animals know when their electrolyte levels are low!

Skincare is of utmost importance for most animals – who, like us, may be plagued by mosquitoes and other biting flies, which irritate and pass diseases like malaria. Natural insect-repellents may come in diverse forms – from chewed-up leaves to rubbed-on millipedes. Brown bears are known to make a paste of Osha (*Ligusticum porteri*) leaves and saliva and apply it on their fur for this purpose. Many primates vigorously massage themselves with rolled up millipedes. Millipedes secrete benzoquinones which violently repel insects and have a wonderful side-effect: they give the monkeys a blissful high, so they can loll about like the best stoners in the business!

You may have seen birds squirming ecstatically on the top of an anthill, wings outspread in an exercise called ‘anting’. Some ants spray formic acid which is repellent to parasites like feather lice. Birds have plenty of these in their plumage. As many as 200 species of songbirds do this, and some pick up ants and rub them deliberately down the shafts of their feathers to get rid of parasites. House sparrows use Neem leaves to keep their nests bug-free but astonishingly, according to one source, switch to the leaves of the Krishna chura (*Delonix regia*) tree, which is rich in quinine during outbreaks of malaria. I had no idea that sparrows could get malaria!

There are many more examples of the denizens of jungleland helping themselves to mother nature’s pharmacy, but sourpuss scientists are still loathe to give them full credit for their successes. Most of the evidence, they sniff, is observational and anecdotal and has not been proved by the scientific method of vigorous laboratory testing, blah-blah. But really, who are we to talk? Some of the most ‘intelligent’ among us humans firmly believe that rhino horn can make girls swoon over guys, crushed tiger bones can cure every known disease, pangolin scales can help in lactation issues and with arthritis, ‘sacred’ ash dispensed by babas can cure heart ailments (I have personal experience here – it cannot!). We have put the lives of so many species in peril because of these ludicrous beliefs. Certainly, the animals seem to know better!

## WARMING CLIMATE INTENSIFIES FLASH DROUGHTS WORLDWIDE

Sudden, severe dry spells known as flash droughts are rising in intensity around the world, with a notable exception in mountainous Central Asia, where flash drought extent is shrinking, according to new research. Heat and changes to precipitation patterns caused by a warming climate are driving these trends, the study found. The new study is the first to apply a systematic, quantitative approach to the global incidence of flash drought, mapping hotspots and regions of rapid increases in recent decades.

### Tracking measures

Many parts of the world have witnessed flash droughts for a longer time, with faster onset speed. The study defined and tracked three critical measures of drought severity: speed of onset, duration and geographic extent. It analyzed 40 years of NASA’s MERRA-2 climate data, from 1980 to 2019, drawn from weather observations, satellite imagery and modeled root-zone soil



moisture, with the aim of improving prediction and disaster preparedness. The study is published in the journal Geophysical Research Letters.

South America, particularly southern Brazil and the Amazon is experiencing strong intensification in all three dimensions of flash drought, aligning with deforestation patterns in the region, high temperatures and less rain. Congo, Angola, Zambia, Zimbabwe, South Africa, Lesotho, and Madagascar are also hotspots. High temperatures were found to be more important than declining precipitation in the African watersheds.

Land cover is also important to flash drought vulnerability. Savanna and grasslands are more susceptible to flash droughts than other ecotypes, particularly in humid and semi-humid climates, the study found.

In Central Asian watersheds, centered on high mountains, including the Himalaya Karakoram, Tianshan and Hindu Kush, flash drought extent shrank over the study period, bucking the worldwide trend. Climate-driven changes in precipitation, melting snowpack and a shift from snow to rain in the mountains have kept soils moist. These changes can cause an increase in flash floods, which have been observed in the region.

### OVER 2,000 PEOPLE BURIED IN PAPUA NEW GUINEA LANDSLIDES: GOVT SEEKS GLOBAL HELP

A Papua New Guinea government official has told the United Nations that more than 2,000 people are believed to have been buried alive by last Friday's landslide and has formally asked for international help.

— The government figure is roughly triple the U.N. estimate of 670 killed by the landslide in the South Pacific island nation's mountainous interior.

— In a letter to the United Nations resident coordinator dated Sunday and seen by The Associated Press, the acting director of the country's National Disaster Center, Luseta Laso Mana, said the landslide "buried more than 2,000 people alive" and caused "major destruction" in Yambali village in Enga province.

#### **For Your Information:**

— Landslides are natural disasters occurring mainly in mountainous terrains where there are conducive conditions of soil, rock, geology and slope. A sudden movement of rock, boulders, earth or debris down a slope is termed as a landslide.

— Natural causes that trigger it include heavy rainfall, earthquakes, snowmelting and undercutting of slopes due to flooding. Landslides can also be caused by anthropogenic activities such as excavation, cutting of hills and trees, excessive infrastructure development, and overgrazing by cattle.

### ANCIENT EGYPTIANS MIGHT HAVE TRIED TO TREAT BRAIN CANCER: WHAT A NEW STUDY FOUND

Analysis of a 4,600-year-old Egyptian skull has revealed signs of brain cancer and its treatment, according to a study published in the journal Frontiers in Medicine on Wednesday.



Using a microscope, scientists Edgard Camarós, Tatiana Tondini, and Albert Isidro found cut marks around the skull's edges surrounding dozens of lesions that earlier researchers had linked to metastasized brain cancer.

The discovery provides further insight into Ancient Egyptian medicine, and possibly pushes back the timeline of humanity's documented attempts to treat cancer by up to a thousand years.

It has long been known that ancient Egyptians had fairly detailed knowledge of the human body and its afflictions. For instance, "it is clear according to preserved papyri and hieroglyphs that ancient Egyptian medicine was advanced enough to describe, classify and successfully treat specific diseases and traumatic injuries, including bone trauma," the study said.

Despite ancient Egypt cultivating one of the most advanced medical knowledge bases known in Antiquity, cancer represented a "clear medical frontier" concerning diagnosis and treatment. The Edwin Smith Papyrus, considered to be the oldest medical surgical treatise in the world dated to around 3,600 years ago, refers to what many researchers believe to be a cancer case. The text describes it as "a grave disease" for which there "was no treatment."

#### AUTISTIC PEOPLE MAKE MORE LOGICAL DECISIONS: STUDY

People with autism are more likely to follow their head rather than heart, making logical decisions without being influenced by 'gut feelings', scientists, including one of Indian origin, have found.

Research has shown that emotional awareness is impaired in people with alexithymia, otherwise known as 'emotional blindness'.

"Our study adds to evidence of atypical psychological processes in autism, but also highlights that the condition may carry benefits in situations where it may be useful to 'follow your head and not your heart'," said Punit Shah from King's College London in the UK.

"It is often thought that people with autism are 'good with numbers' and therefore more rational, but this theory is not well understood," he said.

As 'emotional blindness' is more common in people with autism, this could mean autistic individuals are less susceptible to the emotionally driven Framing Effect -according to which decisions are based on the way choices are framed.

For example, when given 70 pounds in a gambling scenario, people are more likely to gamble their money if they think they are going to 'Lose 50 pounds' than if they stand to 'Keep 20 pounds', even though both options are numerically equivalent.

Participants were given a computerised task to measure their susceptibility to the Framing Effect.

They were repeatedly given the opportunity to gamble in situations where they could either 'lose' or 'gain' from an initial pot of money.

Participants were also asked to close their eyes and count their heartbeats in order to measure how well they perceived their internal sensations. Finally, emotional awareness was measured using a questionnaire.

Although people with autism chose to gamble just as often as those in the control group, there was little difference between gambling when they were going to lose or gain money.



Among people who did not have autism, those most 'in touch' with their internal sensations, and who also had good emotional awareness, were most susceptible to the Framing Effect.

In contrast, susceptibility to the Framing Effect was less pronounced in people with autism because it was not driven by their perception of internal sensations or emotional awareness.

This indicates that the two groups were using different strategies when making their decisions – people without autism were using their intuition, emotion and 'following their heart', while those with autism used a more rule-based rational strategy, researchers said.

"Our research helps to explain that people with autism make more logical decisions because they are not as easily influenced by their internal sensations or 'gut-feelings'," Shah said.

The study was published in the journal *Molecular Autism*.

## SMOKING GOES UP TWO-FOLD AMONG TEEN GIRLS, SAYS TOBACCO REPORT: WHAT'S DRIVING THE HABIT?

While overall tobacco consumption has gone down across the country, smoking has gone up more than two-fold in teen girls, according to data in the latest India Tobacco Control report released by the Union Health Ministry. Disturbingly, smoking is rising among adolescents even as it's going down among older women.

### THE SMOKE SPIRAL IN GIRLS

There has been an increase in smoking among adolescents over a decade but the increase has been sharpest for girls, according to the report. Smoking in girls went up by 3.8 percentage points between 2009 and 2019, increasing to 6.2 per cent. Comparatively, smoking among boys increased by 2.3 percentage points. This comes at a time when there was a decline in smoking among adults, reducing by 2.2 percentage points in men and 0.4 percentage point in women. Not only that, the prevalence of smoking in girls (6.2 per cent in 2019) was much higher than in women (1.5 per cent in 2017), showing that the next generation is getting hooked.

### WHY IS SMOKING INCREASING IN GIRLS?

One of the reasons that teenage girls are smoking more is that they are maturing fast and, like boys, are taking to cigarettes to get rid of their angst and appear cool. Succumbing to peer pressure, some also look upon it as a way to kill their hunger pangs.

"Women have largely been an untapped demographic for tobacco companies. This is the reason girls have become a prominent target, with images of smoking as fashionable and a sign of women empowerment. Another factor is the depiction of smoking in films and television. Ever since the regulation to issue warnings when scenes of smoking appear on screen was introduced in 2012, we saw a decline in smoking on screen. However, with OTT platforms, where content without warning was uploaded, there was an increase in onscreen smoking. This is the reason the ministry brought in the new rules to regulate these platforms," says Prof Monica Arora, one of the editors of the report and public health scientist at Public Health Foundation of India (PHFI).

"There is also a worrisome trend of propagating e-cigarettes as safe when they aren't. They are easily available on portals or in the grey market and are sold without verifying the consumer's age, completely in violation of the laws," she adds.





## WHAT ARE HEALTH RISKS?

Smoking increases the risk of respiratory diseases, lung cancer and cardiovascular issues such as heart attack and stroke. It is known to impact fertility in both men and women. However, women have the additional risk of having smaller fetuses, premature births or babies with damaged lungs and birth defects. Smoking may cause excessive bleeding during delivery. There are longer lasting impacts too. Research has found that women who smoke have a 43 per cent increased risk of experiencing menopause before the age of 50 compared to non-smokers.

According to a 2019 study in the Journal of the American College of Cardiology, women under the age of 50 who smoke have a higher risk of having a specific type of serious heart attack compared to men. This difference may be due to the interaction of estrogen with the chemicals found in cigarettes. Many researchers have correlated tobacco usage to damage in the DNA among cells in the cervix, which contributes to the development of cancer. The American Cancer Society study showed how smokers had a higher risk of mortality from breast cancer than non-smokers.

## THE GENDER GAP IS CLOSING

The gender gap is narrowing down among adolescents. In 2019, 7.4 per cent girls and 9.4 per cent boys were tobacco users. If interventions to get the youth to quit are not made, we might have more smokers in the future. That's why the report has attached a 2040 vision document which advocates how those born after 2022 should not be exposed to tobacco advertising or promotion, where new tobacco products should be banned and the packaging would return to being plain.

## NEW LIGHT-BASED TOOL COULD CUT COST OF SPOTTING VIRAL INFECTIONS

Viruses infect plants, animals, and humans. A virus' spread from animals to humans could unleash pandemics like COVID-19 — significant public health crises with considerable economic and social fallout. To nip such infections in the bud, public health researchers have advocated the 'One Health' approach: monitoring and protecting plant, animal, environment, and human health in an integrated fashion.

Quick, easy, and cost-effective methods of detecting viral infections can go a long way in ensuring this outcome. Recently, researchers from Harvard University, Cambridge, and Jiangsu University, Zhenjiang, reported developing one such tool: it can detect if cells have been infected by a virus using only light and some knowledge of high-school physics.

Their paper was published in the journal Science Advances in March this year.

### A fingerprint of infection

A viral infection can stress cells and change their shapes, sizes, and features. As the infection gains the upper hand and the body becomes 'diseased', the changes become more stark.

The researchers behind the new study translated these cellular changes into patterns that could be used to say if a cell had been infected. They infected cells from a pig's testicles with pseudorabies virus, shone light on them through a microscope, and tracked how changes in the cells distorted the light.

The researchers recorded these distortions at different points of time so that the light data mimicked a progressing viral infection. Then they compared these distortions with those in light



that had been shone through healthy cells. They finally reported that the difference between the two light patterns represented a 'fingerprint' of virus-infected cells.

#### **Changes in contrast**

The distortion in question referred to diffraction patterns. Diffraction is the tendency of light waves to spread out after they pass through narrow openings or around small objects. Once this diffracted light reaches, say, a wall, it renders a pattern of alternating light and dark rings or stripes around a dark centre.

The fingerprint was based on two parameters: the contrast between the light and dark stripes and the inverse differential moment, a mathematical value that defined how textured the diffraction pattern was.

The method can differentiate between uninfected, virus-infected, and dead cells. Virus-infected cells were elongated and had more clear boundaries than uninfected cells. This changed the contrast between light and dark stripes of the diffraction fingerprint, and increased the differences in light intensity.

### WHY COVID VACCINE SAFETY NEEDS SCRUTINY

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

The Indian Council for Medical Research (ICMR) issued a letter to the researchers of Banaras Hindu University last week, countering their study on the side effects of India's indigenous vaccine for COVID — Covaxin. In a rejoinder sent a couple of days after the publication of the research paper in a peer-reviewed journal, ICMR head Rajiv Bahl claimed that his institution had been incorrectly and misleadingly acknowledged in the paper. He pointed out what he called 'critical flaws' in the 'poorly-designed study'. Notably, the ICMR was involved in developing Covaxin along with Bharat Biotech.

#### **What did the BHU study conclude?**

Adolescent girls and those with co-morbidities were at a higher risk of adverse events after receiving Bharat Biotech's BBV152 (Covaxin) vaccine against COVID-19, BHU researchers said. Nearly a third of the participants reported adverse events of special interest (AESI). The one-year observational, follow-up study titled 'Long-term safety analysis of the BBV152 coronavirus vaccine [Covaxin] in adolescents and adults: Findings from a one-year prospective study in North India', also said that serious adverse events occurred in 1% of BBV152 recipients, and that extended surveillance is warranted following the vaccine administration.

Viral upper respiratory tract infections were reported in 47.9% adolescents and 42.6% adults, as per the study. New onset skin and subcutaneous disorders, general disorders, and nervous system disorders were the common AESIs in adolescents. General disorders, musculoskeletal disorders, and nervous system disorders were the common AESIs in adults. Menstrual abnormalities were noticed in 4.6% of female participants. Ocular abnormalities and hypothyroidism were observed in 2.7% and 0.6% of the participants, respectively. Among the serious AESIs (1%), stroke and Guillain-Barre syndrome were identified in 0.3% and 0.1% of the participants, respectively.

In response to this, Bharat Biotech, the vaccine manufacturer which worked with the ICMR's own National Institute of Virology to develop the vaccine candidate, said for such a study in safety to



be effective and informative, and for it to avoid investigator bias, some data points were also required. This included the AESI safety profile of the subjects prior to their participation in the study; a comparison of the safety profile of non-vaccinated subjects during the course of the study; a comparison of the safety profile of subjects who received other vaccines during the course of the study etc.

#### **What did ICMR object to?**

In his letter, Dr. Bahl said ICMR was not associated with the study and had not provided any financial or technical support. He alleged that the authors had acknowledged ICMR for research support without prior approval or intimation to the institution, calling this “inappropriate and unacceptable.”

With reference to the study itself, he claimed there were critical flaws: the study had no control arm of unvaccinated individuals for comparison with the vaccinated group, and therefore, the reported events in the study cannot be linked or attributed to COVID-19 vaccination; it did not provide background rates of patterns observed in the general population, and thereby made it impossible to study the observed events in the post vaccination period. Further, Dr. Bahl claimed there was no baseline information of study participants; the study tool was inconsistent with the AESI as defined in the reference paper, and the method of data collection (participants were contacted over the telephone, and their responses recorded without any clinical confirmation).

He further asked the researchers to remove the acknowledgement to ICMR and publish an erratum. His letter also called to retract the paper, with a remark: “This paper implicitly makes conclusions about vaccine safety that are not supported by evidence.” The BHU recorded that it had received the communique addressed to its researchers. The researchers have communicated their responses to the ICMR.

#### **What was the fallout?**

Most researchers were shocked by the response of the ICMR, terming it as “academic censorship.” Multiple accounts of doctors and researchers on social media also pointed out that the ICMR developed the vaccine along with the company, and not declaring its vested interest was also a serious lapse in research terms. Among those who formulated an official response, foremost was the Universal Health Organisation (UHO), a group of researchers, doctors, and public health experts, who echoed the research ecosystem’s shock at the belated denial. The UHO wrote an open letter to the ICMR stating the study filled a key gap in terms of field data, analysing the safety of Covaxin.

“While we were hoping and expecting that the ICMR would build upon this study, address its shortcomings, and elevate the standards of vaccine safety, we are aghast to come across letters sent by ICMR asking for the retraction of the paper, and threatening the authors of the study,” it said. On the point of not having a control group, the letter said, it was indeed a shortcoming but had been admitted in the study itself. Besides, this actually points to the fact that it was the ICMR that has access to the data with the control group — the original phase 3 trials of Covaxin. Neither the ICMR nor the company had published the long-term safety trials, it charged. While using telephonic interviews was not ideal, it has been used by ICMR in the past, even in papers on COVID vaccines. To call for the retraction of the BHU paper on these lines was unbecoming of a scientific institution of ICMR’s stature, the letter added.



## MENSTRUAL HYGIENE IN INDIAN PRISONS

### The story so far:

India has witnessed a promising shift in the landscape of menstrual hygiene management over the years. The fifth round of the National Family Health Survey (NFHS 2019-2020) revealed that about eight out of 10 young women aged 15-24 years are now using safe menstrual hygiene products. While urban areas and certain demographics have seen improved usage of menstrual hygiene products, the plight of one of the most marginalised populations — women in Indian prisons — remains overlooked. In a society where prisoners are deemed unworthy of fundamental rights, female prisoners face an even greater injustice. Society clings to an unrealistic standard of female purity, refusing to accept that women, too, can commit crimes. This bias has led to a systemic oversight and neglect of female prisoner's basic needs, including menstrual hygiene.

### What is the status of menstrual hygiene in prisons?

According to the National Crime Records Bureau, there are 23,772 women in Indian prisons. Of them, 77% are in the reproductive age group (18-50 years) and are likely to be regular menstruators. However, the availability of sanitary napkins has been inconsistent across different prisons in the country. The quality of sanitary napkins has also been unsatisfactory. Despite recommendations outlined in the 2016 Model Prison Manual, many States have not implemented provisions like supplying adequate water and washroom facilities for female prisoners. Overcrowding and poor socio-economic conditions further exacerbate the struggle of incarcerated women to secure basic necessities such as water, sanitary napkins, detergent, and soap during menstruation.

### What have been policy interventions?

India has been making consistent efforts to improve access to menstrual hygiene products, especially among young women through the Menstrual Hygiene Scheme which includes the distribution of free or subsidised sanitary napkins.

In 2023, India took an important stride forward by formulating the 'National Menstrual Hygiene Policy', to recognise menstruation as a natural process that demands more meaningful attention. At its heart lies a crucial principle: ensuring equity in the safe and dignified management of menstrual hygiene. The draft policy states: "Prioritise equity to enable all menstruating individuals, regardless of their socioeconomic status and geographical location, to have equal opportunities to access and manage their menstruation in a safe and hygienic way. Address disparities and barriers that prevent certain groups from accessing required menstrual hygiene products, resources and information."

Remarkably, the policy identifies prisoners as a target population with a compromised access to menstrual hygiene facilities. This inclusion reflects a positive step forward. However, the policy falls short of providing a concrete action plan to enhance menstrual hygiene management in prisons. It also overlooks the Ministry of Home Affairs as a critical stakeholder that influences menstrual hygiene management in prisons.

### What needs to be done?

The Indian government must ensure that basic standards of menstrual hygiene for women in captivity are met. The uneven implementation of the Model Prison Manual 2016 across States



demands urgent attention as well. As a first step, the government must ensure every State adheres to the recommendations outlined in the manual. The experience of menstruation within prisons presents unique challenges that demand attention through a public health lens, particularly as part of the fight against 'period poverty'. The next step is to encourage collaboration between public health authorities and prison administrators to develop a comprehensive strategy to ensure access to adequate menstrual hygiene products and facilities while prioritising the health and dignity of women behind bars. Third, there is a dearth of empirical evidence. Therefore, there is an urgent need to conduct research to understand the current state of menstrual hygiene within prison walls.

## WORLD MENSTRUAL HYGIENE DAY: STARTING CONVERSATIONS ABOUT PERIODS

Starting conversations about menstruation helps children in more than one way. Delivering a message that leaves no room for doubt, provides them with appropriate information, and reassures them that menstruation is a natural, physiological process helps girls stay prepared but also does away with the fear and misconceptions associated with menstruation.

Menstruation has traditionally been talked about in hushed tones. This Menstrual Hygiene Day (May 28), #PeriodFriendlyWorld kicked off conversations on social media on menstrual hygiene, doing away with taboos and stigma surrounding menstruation and access to menstrual products.

### Normalising conversations

Normalising conversations around menstruation and educating children should be the way ahead. Jaishree Gajaraj, senior consultant, Obstetrician, and Gynaecologist, MANGAI Women's Health Exclusive, said that many schools are already holding sessions for children. "We are seeing girls coming of age very early, and due to awareness, we do not see them surprised anymore. Mothers should sit with their children and explain the whole process. They should tell them that it is not necessary that they get periods every month, and it is not necessary that it should stop in three days and could even be longer," she said.

Sumana Manohar, senior consultant, Obstetrician and Gynaecologist, Apollo Women's Hospital, pointed out that educating children both at home and school will help reinforce menstruation as a physiological phenomenon.

"Let's look at the age of menarche. The average age is between 10 and 15 years. Both puberty occurring before the age of eight, which is called precocious puberty, and delayed puberty beyond the age of 16 should be evaluated. Mostly, puberty occurs between 10 and 12 years. So, ideally, schools should start educating girls about menstrual hygiene and how it is a normal physiological process when they are in class V. The school environment should be conducive, enabling them to change sanitary pads, and clean toilets are important," she said.

While the Federation of Obstetric and Gynaecological Societies of India maintains that the average age of menarche is 13.5, this is not the case in urban areas, where the average age of puberty is 10.5 to 11.5. Dr. Jaishree Gajaraj added: "The reason is that children are now more obese, as a result of which oestrogen production increases and hormonal imbalances are triggered. Lifestyle and food habits are leading to obesity in children."

There are numerous doubts and concerns surrounding menstruation. But there is no need to worry about a number of things. As Dr. Sumana Manohar puts it: "Irregular periods are quite common in the first three years of menarche. This is not a matter of great concern. Two to three



cycles of periods in a year for the first three years, and three to four cycles of periods from the third year are normal as they do not ovulate properly.”

#### **Irregular periods**

Anxious mothers taking their daughters to doctors for a number of related issues is quite common. “We see mothers bringing in their daughters for irregular periods. This is not something to worry about. Due to irregular periods, there may be heavy bleeding or pain that can be managed without medications. But, if there is profuse bleeding and unbearable pain, medical attention is required. Some of the main concerns that parents raise are lower abdominal pain and cramps. It is important for mothers to reassure their daughters and there is nothing to be scared about,” she added.

K. Kalaivani, director, Institute of Obstetrics and Gynaecology and Government Hospital for Women and Children, said children should be informed that pain or cramps are quite normal on the first and second days of periods, which will then subside.

“Some are worried about excessive bleeding. It varies from person to person. They need not worry because it subsides after the third day,” she said.

Stressing hygiene, she said, “Some do not bathe for three days, but that shouldn’t be the case. Personal hygiene is important. Times have changed, and there is better access to sanitary pads with the State government supplying them free to schools.

“Vending machines have also come up in a number of places,” she said.

Dr. Jaishree says young children should use regular sanitary pads, while those over 20 years — married or unmarried — can use menstrual cups.

“We should tell children that this is a very normal physiological event. It should be taught in a way that in the years to come, children will look at it that way. To enable better orientation towards menstruation, we should educate both girls and boys simultaneously. Parents and older siblings should be encouraged when questions are asked and there should be no secrecy,” she added.

# DreamIAS