

CURRENT AFFAIRS FOR UPSC

16th to 22nd March 2025

DreamIAS



INTERNATIONAL

WHAT IS THE REACH OF AN ICC WARRANT?

The story so far:

Former Philippines President Rodrigo Duterte was flown to the Netherlands on March 12 to face charges of crimes against humanity before the International Criminal Court (ICC) for his role in the deadly “war on drugs” during his tenure.

What was Duterte’s ‘war on drugs’?

In a statement, the court said its Pre-Trial chamber had reviewed evidence from the Office of the Prosecutor and found reasonable grounds to believe he is “individually responsible as an indirect co-perpetrator for the crime against humanity of murder, allegedly committed in the Philippines between November 1, 2011, and March 16, 2019.” The ICC’s investigation into extrajudicial drug-related killings under Mr. Duterte covers his tenure as Davao City mayor, starting in 2011, through his presidency, which ended in 2022. By the end of his term, human rights groups and the ICC prosecutor estimated that police and unidentified assailants had killed approximately 30,000 people.

Where do domestic politics stand?

Despite its expansive mandate, the court lacks enforcement authority and relies on national governments to execute its warrants, rendering it vulnerable to domestic political considerations.

Mr. Duterte withdrew the Philippines from the ICC’s jurisdiction in 2019, yet prosecutors argued they retained authority to investigate alleged crimes against humanity committed before the withdrawal. A formal investigation was launched in 2021. Initially, President Ferdinand Marcos Jr. refused to cooperate, but his position shifted following the collapse of the Duterte-Marcos alliance.

Mr. Marcos has maintained that the Philippine government was merely upholding its obligations to Interpol by facilitating the execution of the ICC warrant. Since taking office, he has made no effort to rejoin the court.

Does the ICC have jurisdiction?

Mr. Duterte and his allies have long contested the ICC’s jurisdiction, citing the Philippines’ 2019 withdrawal from the Rome Statute. In January 2023, the ICC authorised its prosecutor to resume an investigation into the killings, reversing a 2021 suspension granted at the Philippines’ request. The Philippines government had argued that its institutions were capable of prosecuting the alleged crimes, invoking the principle of complementarity, which limits ICC intervention to cases where national courts are “unable or unwilling” to act. The Pre-Trial Chamber rejected this claim, ruling that the Philippines had not demonstrated sufficient efforts to warrant a deferral.

Under the Rome Statute, all 125 signatory states are required to arrest and surrender individuals facing ICC warrants if they enter their territory. However, compliance remains inconsistent. Non-compliance leads to a referral to the Assembly of States Parties, the court’s governing body, and ultimately to the United Nations Security Council (UNSC). When the UNSC invokes the court’s



jurisdiction, all relevant UN member-states are obligated to cooperate, regardless of their status under the Rome Statute.

What are the implications for the court?

Mr. Duterte's indictment is a rare triumph for the ICC, unlike its largely symbolic arrest warrants for Russia's Vladimir Putin and Israel's Benjamin Netanyahu, which remain unenforced.

However, the arrest is not without risks for the court. The ICC is an embattled institution these days, with the Trump administration threatening to arrest its top officials over investigations of Israel, a close U.S. ally.

China has also warned against politicising ICC cases. Though not a signatory to the Rome Statute, it is embroiled in a territorial dispute with the Philippines over the South China Sea. Beijing's statement was a thinly veiled critique of how a case meant to ensure accountability for grave international crimes has instead become a battleground for domestic political rivalry.

What lies ahead for Duterte?

During the proceedings before the Pre-Trial Chamber, Mr. Duterte's lawyer argued that his arrest and extradition from Manila to the Netherlands constituted "pure and simple kidnapping." The next step is a hearing to confirm the charges the prosecutor intends to pursue, during which Mr. Duterte may also apply for interim release. Only after this hearing will the court decide whether to proceed with a trial. A trial, if approved, is unlikely to begin anytime soon.

COULD TRUMP UNDO BIDEN-ERA PARDONS ALLEGEDLY SIGNED WITH 'AUTOPEN'?

US President Donald Trump Monday (March 17) declared that pardons signed by his predecessor Joe Biden were "void, vacant and of no further force and effect" because they were signed with an autopen.

- In a Truth Social post, Trump wrote, "The "Pardons" that Sleepy Joe Biden gave to the Unselect Committee of Political Thugs, and many others, are hereby declared VOID, VACANT, AND OF NO FURTHER FORCE OR EFFECT, because of the fact that they were done by Autopen."
- The President claimed that Biden "did not know anything about these documents" and that these "were not explained to, or approved by, Biden."
- When asked about his own use of the autopen, Trump said, "We may use it, as an example, to send some young person a letter because it's nice... But to sign pardons and all of the things he signed with an autopen, is disgraceful."

Do You Know:

- An autopen is essentially a printer-size machine that duplicates signatures using real ink, allowing public figures to autograph thousands of items, from posters to memorabilia. The machine has an arm that can hold a standard pen or pencil and can reproduce the programmed signature on paper.
- The device is not a new concept. A precursor to the Autopen was the 19th-century 'Polygraph'. It was essentially a pantograph, allowing two or more pens to be moved simultaneously by the writer to make duplicate copies. The device was created by John Isaac Hawkins and patented in



the US in 1803. US President Thomas Jefferson acquired this device a year later, calling it “the finest invention of the present age”.

- The issue was raised by the conservative thinktank, Heritage Foundation, responsible for the Project 2025 conservative policy wishlist. The foundation’s Oversight Project tweeted last week that it had analysed thousands of pages of documents with Biden’s signatures, including pardons, which it claimed was signed by an autopen.
- According to the US Constitution, the President does not have the authority to overturn a predecessor’s pardons. Article II Section 2 of the Constitution simply says that the President “shall have Power to grant Reprieves and Pardons for Offences against the United States, except in Cases of Impeachment.”

This is boosted by a 2005 Department of Justice (DoJ) memo, which says the President need not “personally perform the physical act of affixing his signature to a bill he approves and decides to sign” into law. He may “sign a bill within the meaning of Article I, Section 7 by directing a subordinate to affix the President’s signature to such a bill, for example by autopen.” Further, a 1929 DoJ opinion said that “neither the Constitution nor statute prescribed the method by which executive clemency shall be exercised or evidenced. It is wholly for the president to decide.”

30-DAY LIMITED CEASEFIRE IN UKRAINE IS WELCOME – BUT IT ISN’T ENOUGH

For nearly three years, there has seemed to be no end in sight to the war in Ukraine for many reasons — among them, that the US, under former president Joe Biden, refused to engage with Russia, and because of the Kremlin’s determination to escalate the conflict. A few weeks ago, however, President Donald Trump opened the door to negotiations with Russian President Vladimir Putin. Trump has insisted that Putin will honour any agreement they reach. In contrast, the US president accused his Ukrainian counterpart Volodymyr Zelenskyy of “gambling with World War III” during the infamous White House confrontation in February. Yet, during the March 18 phone call between Trump and Putin — their second in a month — Putin rejected the 30-day immediate and full ceasefire proposal that Trump had hoped would serve as a first step towards a permanent peace deal. This should make it clear to Washington that negotiating with Moscow will be far more challenging than talking with Kyiv. Even as Trump pushed for a ceasefire that Ukraine had already agreed to, what he obtained was a limited commitment: Russia would refrain from attacking Ukraine’s energy grid if the latter did the same. Clearly, Putin has still not retreated from his maximalist positions concerning territory and NATO membership.

Even so, a 30-day ceasefire on energy infrastructure strikes is a welcome development. Negotiations are expected to begin soon for a maritime ceasefire in the Black Sea. The future of this region is likely to be a key element in any peace deal, given the Kremlin’s assertion that the Black Sea is part of “historical” Russia. The most contentious issues will be those concerning military aid and intelligence. During the call, Putin demanded a complete halt to “all” Western military support for Ukraine: This means not just the US, but also Britain, France, Germany and other NATO countries. The glaring contradiction is that the European Union very recently initiated a proposal to pledge up to 40 billion euros in military aid for Ukraine. How Washington navigates Moscow’s demands, while balancing its relations with Europe — united in backing Kyiv — will be crucial in determining the likelihood of a full ceasefire.



Ultimately, all parties must engage in further dialogue. Two phone calls between Putin and Trump are far from sufficient to end the war on terms that are also fair to Ukraine. Encouragingly, despite the hostile White House meeting two weeks ago, Ukraine's visiting Foreign Minister Andrii Sybiha stated during the Raisina Dialogue in Delhi that Kyiv believes a "long-lasting and just peace" can be achieved under Trump's leadership. Moscow, too, has to provide more reason to believe that it desires an end to the war. That Russia attacked Ukraine with kamikaze drones and surface-to-air missiles hours after Putin told Trump he would sign up for a partial and temporary ceasefire is not a good augury. Talks for a full ceasefire are expected to continue this weekend in the Saudi Arabian city of Jeddah — a flawed, short-term one will not serve the cause of peace or Ukrainian sovereignty.

U.S. PLANNING TO ISSUE TRAVEL RESTRICTIONS ON 41 NATIONS

The Trump administration is considering issuing sweeping travel restrictions for the citizens of dozens of countries as part of a new ban, according to sources familiar with the matter and an internal memo seen by Reuters.

The memo lists a total of 41 countries divided into three separate groups.

The first group of 10 countries, including Afghanistan, Iran, Syria, Cuba and North Korea among others, would be set for a full visa suspension.

In the second group, five nations — Eritrea, Haiti, Laos, Myanmar and South Sudan — would face partial suspensions that would impact tourist and student visas as well as other immigrant visas, with some exceptions.

In the third group, a total of 26 countries, including Belarus, Pakistan and Turkmenistan, would be considered for a partial suspension of U.S. visa issuance if their governments "do not make efforts to address deficiencies within 60 days", the memo said.

Changes expected

A U.S. official speaking on the condition of anonymity said that there could be changes on the list and that it was yet to be approved by the administration, including U.S. Secretary of State Marco Rubio. The New York Times first reported on the list of countries.

The move harkens back to President Donald Trump's first-term ban on travellers from seven majority-Muslim nations, a policy that went through several iterations before it was upheld by the Supreme Court in 2018.

The U.S. President issued an executive order on January 20 requiring intensified security vetting of any foreigners seeking admission to the U.S. to detect national security threats. That order had directed several cabinet members to submit by March 21 a list of countries from which travel should be partly or fully suspended because their "vetting and screening information is so deficient."

A LASTING CEASEFIRE REMAINS DISTANT IN WEST ASIA – PEACE EVEN MORE SO

When Israel and Hamas reached a three-phase ceasefire on January 19, there was a glimmer of hope for the war-torn Gaza Strip, much of which lies in ruins. But building on the deal to move towards a permanent peace was riddled with challenges from Day One. While the first phase



concluded on March 1, negotiations for phase two — aimed at ending the war with the total withdrawal of Israeli forces and the release of all hostages — never began. To pressure Hamas into releasing more hostages, Israel cut off aid and electricity to Gaza. It broke the ceasefire on March 18, carrying out airstrikes that killed more than 400 people and left hundreds more injured. Following this, a ground offensive was launched as forces moved up to the Netzarim Corridor, which divides the north and south of Gaza. With the war having all but resumed and the US expected to provide unconditional support to Israel, West Asia, yet again, is being plunged into the dark.

The airstrikes are part of Israel's strategy to force concessions from Hamas, which still has 59 hostages in captivity, and was reluctant to give up leverage without a definitive move to the second phase. This strategy imposes further suffering on a Palestinian population already enduring catastrophic living conditions. The resumption of hostilities does not help the predicament of the remaining hostages either, as Hamas will continue to use them as leverage. Indeed, families of these hostages have accused Prime Minister Benjamin Netanyahu of "giving up" on them.

The war arguably keeps Netanyahu in power given that he needs the support of right-wing hawks who have rallied against every ceasefire proposal. One far-right politician who quit the government over the ceasefire has returned. Netanyahu's appearance in his corruption trial has been postponed. Votes crucial to his survival are scheduled in the legislature. But the only way forward is not through a continuation of Netanyahu's politics as usual. It is through a negotiated settlement that maps out an end to the war and the return of the hostages. There was some movement towards this when an Arab-led plan for Gaza's reconstruction was presented to the US and Israel, but it was rejected. Reducing Gaza to rubble will not achieve Israel's goal of obliterating Hamas. The US has confirmed that Hamas has already recruited as many fighters as it had lost. Intensified violence, along with the suspension of humanitarian aid, will only fuel further resistance. Sustained dialogue alone can lead to a long-lasting ceasefire. But until the Israeli Prime Minister stops focusing on clinging to power, a long-lasting ceasefire will remain a distant prospect, and peace even more so.

IS SYRIA HEADING TOWARD PEACE OR MORE CHAOS?

The story so far:

Syria has entered a three-month period of political and military uncertainty following the fall of Bashar al-Assad's regime in December 2024. Interim President Ahmed al-Sharaa is seeking international legitimacy while navigating internal instability. His government has reached a significant agreement with the U.S.-backed Kurdish Syrian Democratic Forces (SDF), integrating their military and administrative structures into the Syrian state. However, conflict persists, with Israel expanding control in the Golan Heights under the pretext of counterterrorism. The country's economy remains crippled by Assad-era sanctions, hindering reconstruction efforts.

Who leads the Syrian government?

Since the overthrow of Mr. Assad's regime, power has transitioned to an interim government led by Mr. al-Sharaa, leader of Hay'at Tahrir al-Sham (HTS).

Despite its militant origins, HTS has rebranded itself as a governing authority, pledging to respect minority rights. However, the new administration lacks full territorial control. Mr. Assad's



loyalists continue to operate in the coastal region of Latakia, while the SDF operate in the northeastern semi-independent Rojava region.

What is the current state of conflict?

Although the Syrian Arab Army (SAA) largely disintegrated after Mr. Assad's departure, loyalist cells continue resisting, particularly in Latakia, an Alawite stronghold. The situation is complicated by ongoing hostilities in the northeast, where the Turkish-backed Syrian National Army (SNA) continues shelling SDF positions as part of Ankara's broader strategy to curb Kurdish influence. Israel has intensified military operations, launching over 400 airstrikes in December 2024, targeting military facilities, airports, warships and infrastructure. The Israel Defense Forces (IDF) subsequently advanced beyond the United Nations Disengagement Observer Force (UNDOF) buffer zone in the Golan Heights. The invasion of the UNDOF zone has been condemned by the UN as a violation of international law. Prime Minister Benjamin Netanyahu justified the operation as a preventive measure against "terrorist threats" and demanded that the new Syrian government demilitarise the region south of Damascus.

What about reports of Alawite massacres?

Sectarian violence has escalated in Latakia since December, with reports of massacres against the Alawite community. The U.K.-based Syrian Human Rights Observatory reported that 1,383 civilians have been killed by government-allied groups and Mr. Assad's loyalists.

The international community has raised concerns over potential revenge killings, given HTS's historically Sunni Islamist ideology. Critics argue that many government security officers remain HTS loyalists, fuelling suspicions of targeted reprisals. However, Mr. al-Sharaa has denied any state involvement, attributing the start to the unrest to misinformation campaigns allegedly linked to Russia and Iran.

Why is Syria at risk of further violence?

Syria remains one of the poorest states in the world, with over 90% of the population living under the poverty line. Combined with the factor of hundreds of thousands of combatants, whose previous political-military structures have disintegrated, wandering around the country without employment or security, the region remains ripe for new waves of violence. These issues could be alleviated, if Assad-era international sanctions on Syria's economy were lifted, nevertheless, they remain in place, as foreign leaders remain cautious of the new government. Mr. al-Sharaa has called for the reconsideration of sanction regime, with the first steps being taken by the U.K. and Canada, easing the trade restrictions on key petroleum companies and Syrian Central Bank.

Ultimately, Syria's future hinges on the drafting and enforcement of a new constitution that guarantees minority rights and national sovereignty. Whether the interim government can consolidate power, gain international recognition, rebuild the economy and prevent further fragmentation remains uncertain, but the coming months will be critical in determining Syria's path forward.

RECIPE FOR FAILURE

Donald Trump came to power with a promise to shut down the wars in Ukraine and West Asia. But in less than two months, Mr. Trump, like most of his predecessors, started bombing another country. This time it is Yemen, one of West Asia's most impoverished countries. Trump



administration officials say the “pre-emptive” strike, targeting the Ansar Allah (better known as the Houthis), was to prevent Shia militants from attacking the shipping lanes of the Red Sea. The targets: Houthi missile launchers and the homes of the movement’s leaders in Sana’a, Yemen’s capital, and Sa’dah, the mountainous base of the rebels. “The minute the Houthis say, ‘We’ll stop shooting at your ships’, we’ll stop shooting at your drones,” said U.S. Defence Secretary Pete Hegseth, indicating a long-drawn campaign. The Houthis have said that at least 53 people including five children have been killed, and vowed to meet “escalation with escalation”. On Sunday, they launched ballistic and cruise missiles and drones to target aircraft carrier USS Harry S. Truman and other warships in the region, according to Yemen state TV.

The Houthis, who captured Sana’a in 2014, “declared war against Israel” in 2023 in solidarity with the Palestinians, after Israel launched the war on Gaza, following the October 7 Hamas attack. Using missiles and drones, the Houthis have attacked over 100 commercial vessels in the Red Sea. There was a lull in the Houthi attacks after the Israel-Hamas ceasefire came into force on January 19. The U.S.’s latest strike has come as the Houthis were reportedly planning a resumption of attacks on Israeli vessels for violating the ceasefire agreement. But Mr. Trump wants to send a bigger message to the Houthis’ backers — Iran. Earlier this month, he had reached out to Iran to discuss its nuclear programme, an offer Tehran has not taken yet. By launching a massive air strike against the Houthis, one of the strongest members of the Iran-backed resistance network, Mr. Trump is unmistakably telling the Iranians that he is not hesitant to use force. But Mr. Trump is also stepping into a strategic abyss. The Houthis are not just a ragtag militia. They are the state in half of Yemen. They have survived seven years of relentless Saudi bombing. The Biden administration along with its European allies also carried out dozens of strikes, while Israel launched at least four massive strikes. But none of these attacks blunted their fire power. Mr. Trump is repeating the recipe for failure, which could kill more Yemenis and push many more into misery, besides destabilising the region further. It is high time the world started engaging the Houthis to bring peace to the waters around Yemen instead of mindlessly bombing Yemen.

IN FRESH ATTACKS ON YEMEN’S HOUTHIS, WHAT IS US SEEKING?

- US President Donald Trump, in a Truth Social post, addressed both the Houthis (Ansar Allah) and Iran, saying, “To all Houthi terrorists, your time is up and your attacks must stop...To Iran, support for Houthi terrorists must end immediately...” Two days later, Trump reiterated that the Houthi attacks “emanate from, and are created by Iran”, and declared that every shot being fired by the Houthis will be viewed as a shot fired from Iran, which would “suffer consequences”.
- Since December, 2023, Houthi attacks in the Red Sea have disrupted shipping lanes, causing ships to go around the Cape of Good Hope (all the way below Africa), and a meteoric rise in insurance premiums for those that have continued to sail through the Bab-el-Mandeb (effectively the link between the Red Sea and the Indian Ocean).
- The new anti-Houthi US operations reflect continuity in US policy. Former President Joe Biden had listed the Houthis as Specially Designated Global Terrorists in January 2024 (without re-designating them as a Foreign Terrorist Organization, or FTO) and the US Navy had begun leading Operation Prosperity Guardian in December 2023.
- The American casus belli was always linked to the disruption in global and US shipping. Countering such disruptions (and enforcing the freedom of navigation) has historically dominated the US Navy’s mandate.

**Do You Know:**

- While the United States has backed the Saudi-led coalition's Operation Restoring Hope against the Houthis since 2015, the first Trump administration's direct military action in Yemen did not overbearingly focus on the Houthis.
- The United States Central Command's public announcements between 2017 and 2020 reflected a focus on striking Al Qaeda and Islamic State targets in Yemen, rather than Ansar Allah. The latter were a more insular group at the time, focused on the civil war and belligerent Arab states.
- The Houthis are veterans of weathering operations that primarily rely on airstrikes. According to the Yemen Data Project, the group withstood at least 20,000 airstrikes from the Saudi-led coalition between 2015 and 2023. Moreover, apart from an art of war that relies heavily on mobility and small modular combat units, the Houthis have spent decades imbibing the lessons learnt by other groups such as Lebanon's Hezbollah when fighting asymmetric wars against an adversary that can out-gun and out-spend.

TERROR ON THE TRAIN

The attack on the Jaffar Express, on March 11, in a mountainous region of Balochistan, is one of the most daring attacks by the Baloch Liberation Army (BLA) in recent times. The BLA's move, demanding the release of Baloch militants from jails, was met with a swift military response from Pakistan. According to the Pakistani authorities, 354 passengers were rescued after a 36-hour long stand-off in which 26 security personnel and passengers and 33 rebel fighters were killed. Pakistan has accused its "eastern neighbour" (India) and "Afghan handlers" of helping the Baloch separatists. But beneath such allegations lie Pakistan's growing internal security vulnerabilities. The BLA, now the most powerful separatist group from the restive Balochistan province, has been carrying out a host of attacks. In November 2024, it claimed a suicide bombing at a train station in Quetta, the provincial capital, that killed at least two dozen people. It has also targeted Chinese workers in repeated attacks in the province. And with each attack, the Pakistani military has responded with heavy force. But it seems clueless on how to deter the attacks and bring stability to the region.

While visiting Quetta after the Jaffar Express attack, Pakistan Prime Minister Shehbaz Sharif made a rare acknowledgement that the lack of development in Balochistan was an obstacle in eliminating terrorism. Baloch separatists have long argued that the Pakistani state, dominated by Punjabis and Sindhis, has historically ignored the Balochis. The BLA and other Baloch nationalist groups accuse the federal government of plundering Balochistan's resources, and blame security agencies for the forced disappearances, torture and extra-judicial killings of Baloch civilians and rebels. Pakistan's reliance on military campaigns in Balochistan has only reinforced the narrative of the separatists — of the province being treated differently by Islamabad-Rawalpindi. Pakistan has blamed India and the Islamic Republic of Afghanistan (before the 2021 Taliban takeover) for helping Baloch rebels. It also welcomed the return of the Taliban to Kabul as a moment of Afghanistan "breaking the shackles of slavery". But it was a bonhomie that did not last. Today, Pakistan says Baloch separatists and the Tehreek-e-Taliban Pakistan (TTP) are operating from safe havens in Taliban-run Afghanistan. Together, the TTP and Baloch rebels pose grave security challenges to Pakistan at a time when it is battling economic uncertainty and political instability. But Balochistan is a clear example that a military response alone does not bring peace and stability. If Pakistan wants to calm its restive regions, it should address the political and economic problems that fuel instability and insurgency.



NATION

INDIA AND CANADA AFTER TRUDEAU

With Justin Trudeau stepping down as prime minister and Mark Carney taking his place, India and Canada have an opportunity to reset their relationship after recent turbulence. Despite last year's diplomatic fallout triggered by Trudeau's accusations that India had violated Canada's sovereignty in the killing of Khalistani separatist Hardeep Singh Nijjar, bilateral trade has continued to grow, as has migration from India to Canada. A primary obstacle to stronger ties was Trudeau's foreign policy towards India, heavily influenced by domestic political considerations as he played to the extremist fringe of the Sikh diaspora and relied on the support of Jagmeet Singh's National Democratic Party. Carney's leadership offers both nations a crucial chance to mend fences.

Canada has become an outlier among India's steadily strengthening partnerships with other Anglosphere nations, such as Australia, New Zealand, the UK and the US. However, Canadian leaders across the political spectrum recognise the strategic and economic importance of fostering closer ties with India. Carney, an economist and former central bank governor, has already signalled his intention to "rebuild" relations. India, meanwhile, is also signalling its willingness to engage with Carney's administration – it is considering restoring its high commissioner to Canada. In a further sign of diplomatic movement, Canada's spy chief, Daniel Rogers, is scheduled to visit India next week for a global intelligence conference. Both these developments bode well for a long overdue détente. While the Khalistan issue will not be resolved overnight, Canada's new government should ensure improved communication and cooperation, while respecting India's security concerns.

India and Canada have a lot to benefit from an enduring bilateral partnership, not least in key sectors such as pharmaceuticals, agri-tech, energy, and climate change mitigation. A renewed diplomatic push could also revive negotiations for the stalled Comprehensive Economic Partnership Agreement. In 2022, Canada recognised India as a critical regional partner in its Indo-Pacific Policy document, emphasising their shared goal of countering China's growing influence. Given the economic, strategic, and diasporic ties between India and Canada, the deteriorating relationship in the last one-and-a-half years was indeed a cause for great concern. A reset in ties with India may even help Carney to navigate his greatest challenge before the election later this year. US President Donald Trump has openly expressed expansionist ambitions and imposed a series of tariffs, and in response, Canada is set to impose counter-tariffs, setting the stage for intensifying tensions with its southern neighbour and traditional ally.

ILLEGAL MIGRANTS TO PHD STUDENTS, US WEAPONISING VISAS

Two images frame the crackdown against migrants in Donald Trump's America. In the first, illegal immigrants were being forced onto an aircraft in shackles. The second is surveillance footage from LaGuardia Airport in New York of Ranjani Srinivasan, a PhD candidate and Fulbright scholar at Columbia University, fleeing the US for Canada by "self-deporting". Srinivasan, targeted by federal immigration authorities for allegedly participating in anti-Israel protests on campus, is one of several international students facing action by the US government. Its blunt approach was summed up by Secretary of State Marco Rubio last week: "No one has a right to a student visa... when you apply for a student visa or any visa to enter the United States, we have a right to deny you for virtually any reason." This targeting of immigrants is, first and foremost, counterproductive and a threat to the foundational principles that have underpinned the US's

4TH FLOOR SHATABDI TOWER, SAKCHI, JAMSHEDPUR



global power. For universities, institutional autonomy and campus freedoms are at stake. Beyond America, it raises questions and challenges for countries like India and China, from where the largest number of students go to the US.

In the aftermath of Donald Trump's comprehensive election win in 2024, the liberal opposition in the US appears to have lost its balance and bearings. Ironically, the Trump campaign had sought to mobilise outrage against "cancel culture". Detaining and deporting students for political speech on campus is a form of the same "cancelling" that Trump and his supporters claim to oppose. Now, universities must, of course, speak out against the action against students and faculty and stand up for their autonomy. It is also important to frame freedom on campus as an issue that concerns broader society and universal values. That is the challenge for Democrats and liberals in the US. The migrant is also a contributor to the US's economic might. Apart from the fact that many students pay their way — tuition fees are often higher for them than for locals — they also form a ready pool for recruiting highly skilled professionals. Some of the best young minds from India's finest universities make their way to the US and an important reason they do so is America's promise of freedoms. Upending this system harms the US most — something Elon Musk surely knew when he opposed tweaks to the H-1B visa regime.

The fact is that the US cannot afford to become a closed economy or society. To thrive and survive, the ecosystem that produces Sundar Pichai and Satya Nadella must allow the Ranjani Srinivasans and Mahmoud Khalils space to express themselves. What began as an exercise in tackling illegal immigration should not morph into targeting anyone who disagrees with the regime. As Delhi discusses the contours of its trade deal with the US, the status of skilled professionals and the legal protections afforded to them should also be a consideration. The witch-hunt will cast a shadow on any agreement.

A CHANGE NOW

In the first acknowledged discussion on the Pannun episode and anti-India activities by pro-Khalistani groups in the U.S. since the Donald Trump administration took office, Defence Minister Rajnath Singh raised the issue in a meeting with U.S. Director of National Intelligence Tulsi Gabbard. He urged the U.S. to designate Sikhs For Justice (SFJ), led by Gurpatwant Singh Pannun, as a foreign terrorist organisation, citing its anti-India activities on American soil and its alleged backing by Pakistan's Inter-Services Intelligence (ISI). Ms. Gabbard was in India to also attend the annual Intelligence and Security Chiefs Conference, chaired by National Security Adviser Ajit Doval. The conference, now in its fourth edition, took place a day before the annual Raisina Dialogue, the flagship conference of the Ministry of External Affairs (MEA), co-organised with the Observer Research Foundation.

Founded in 2007 by Pannun, a U.S.-based attorney, the SFJ advocates "self-determination" for Sikhs in their "historic homeland" of Punjab, seeking to establish a sovereign state of Khalistan. The Indian government banned the organisation in 2019 under the Unlawful Activities (Prevention) Act for anti-India activities. The Khalistani insurgency remains a dark chapter in India's history, having led to the assassination of a Prime Minister. Its resurgence in several western countries has been a growing concern for India. Pro-Khalistani protests, often turning aggressive, have become a pattern. Most recently, External Affairs Minister S. Jaishankar was heckled, with pro-Khalistan slogans being raised, during his visit to London earlier this month, prompting the MEA to lodge a strong protest with the U.K. Diplomatic efforts to address the issue, particularly with Canada and the U.K., have often been met with a lacklustre response, frustrating India. However, recent allegations that Indian agencies attempted targeted killings of Khalistani

4TH FLOOR SHATABDI TOWER, SAKCHI, JAMSHEDPUR



sympathisers have strained bilateral ties with Canada and the U.S. Relations with the then Trudeau administration in Canada were tense, while under the Biden administration, India faced significant diplomatic pressure after a U.S. investigation charged an Indian citizen — allegedly linked to the Research and Analysis Wing (RAW) — with orchestrating a plot to kill Pannun. The issue became so serious that Mr. Doval refrained from accompanying Prime Minister Narendra Modi on an official visit. The Trump administration, so far, appears less inclined to escalate the matter and may be more receptive to India's concerns. While India continues to push for action against anti-India and separatist groups, it must however ensure that its efforts do not impact the by and large cohesive Indian diaspora abroad, nor affect India's diplomatic relationships with partners.

MOVING ON SECURITY, GABBARD AND OTHERS FROM FIVE EYES JOIN INTEL TSARS IN DELHI

Signalling close cooperation on issues related to security, US Director of National Intelligence Tulsi Gabbard, UK's National Security Advisor Jonathan Powell and New Zealand's intelligence head Andrew Hampton joined intelligence chiefs of different countries at a gathering in New Delhi Sunday.

- The intelligence tsars, attending a conference organised by the National Security Council Secretariat, were being hosted by National Security Advisor Ajit Doval, R&AW chief Ravi Sinha and Intelligence Bureau director Tapan Deka.
- Both Gabbard and Powell will also attend the Raisina Dialogue, starting Monday. Organised by the Observer Research Foundation and the Ministry of External Affairs, the three-day conference will be inaugurated by Prime Minister Narendra Modi. New Zealand Prime Minister Christopher Luxon, who reached New Delhi Sunday, will join the inaugural session as the Chief Guest and deliver the keynote address.
- Representatives from nearly 125 countries including Ministers, former Heads of State and Heads of Government, military commanders, industry captains, technology leaders, academics, journalists, scholars on strategic affairs, experts from leading think tanks will participate in the Dialogue.
- The theme of the 2025 edition, the MEA said, is 'Kalachakra – People, Peace and Planet'. Over the course of three days, decision makers and thought leaders will engage each other across conversations in various formats, over six thematic pillars: —Politics Interrupted: Shifting Sands and Rising Tides; —Resolving the Green Trilemma: Who, Where, & How; —Digital Planet: Agents, Agencies and Absences; —Militant Mercantilism: Trade, Supply Chains & the Exchange Rate Addiction; —The Tiger's Tale: Rewriting Development with a New Plan; and —Investing in Peace: Drivers, Institutions, & Leadership.
- The United States, Canada, New Zealand, Australia, and the United Kingdom are the five English-speaking nations that make up the "Five Eyes," a multilateral intelligence-sharing network that includes over 20 agencies. It uses signals intelligence (SIGINT) as well as surveillance. Since intelligence papers exchanged amongst the member nations are classified as "Secret—AUS/CAN/NZ/UK/US Eyes Only," the group was dubbed "Five Eyes."

Do You Know:

C Raja Mohan writes in 'The Five Eyes fracture':

4TH FLOOR SHATABDI TOWER, SAKCHI, JAMSHEDPUR

Telegram: http://t.me/DreamIAS_Jamshedpur



- Formed during World War II, the “Five Eyes” — comprising Australia, Canada, New Zealand, the UK, and the US — now faces an unprecedented internal crisis, triggered by profound shifts in US policy in Donald Trump’s second term.
- A central feature of this alliance is the intelligence sharing agreement that Washington and London signed in 1946 that built on the bilateral wartime cooperation on intercepting and decoding enemy communications.
- The bilateral agreement was expanded to cover the rest of the “Anglosphere” and focused on collecting and analysing Signals intelligence of common interest. Canada joined in 1948 followed by Australia and New Zealand in 1956. The Anglosphere refers to the English-speaking world, once part of the British empire, which shares common traditions of politics, law and culture. During the Cold War, the Five Eyes played a critical role in monitoring Soviet and Warsaw Pact communications. After 9/11, the Five Eyes expanded its scope to cover counterterrorism and cybersecurity. In the past decade, the alliance turned its focus toward China, warning against the risks posed by companies like Huawei.

NAVIGATING DIFFERENCES

At the 10th edition of the Raisina Dialogue, visiting New Zealand Prime Minister Christopher Luxon — the conference’s chief guest — outlined three major geopolitical shifts shaping the world: the replacement of rules with power, the rise of security over economic considerations, and a move from trade efficiency to protectionism and resilient supply chains among trusted partners. In this context, Mr. Luxon suggested that India and New Zealand, despite their size disparity, could be ideal partners. Both democracies share an interest in ensuring freedom of navigation in the Indo-Pacific. While New Zealand is not part of the Quad (Australia, India, Japan, the United States) and does not seek membership, Mr. Luxon noted the ongoing dialogue among New Zealand, Australia, Japan and South Korea on regional issues. Following talks with Prime Minister Narendra Modi, the two countries signed a defence Memorandum of Understanding (MoU) to enhance military cooperation, staff college exchanges, and naval port calls. They also agreed to restart talks on a free trade agreement, aiming to expand their modest bilateral trade, currently under \$2 billion. However, challenges remain, particularly around market access for dairy and agricultural products, which contributed to India’s decision to exit the Regional Comprehensive Economic Partnership (RCEP), of which New Zealand is a member. In contrast, New Zealand’s trade with China stands at approximately \$24 billion, despite broader strategic concerns. Connectivity between the two nations received a boost, with Air India and Air New Zealand signing a codeshare agreement that may also lead to the first direct flights between the countries by the end of 2028.

Despite the positive tone, Mr. Modi voiced concern over “anti-India activities by certain illegal elements” in New Zealand, referencing protests and a Khalistan referendum held by the ‘Sikhs for Justice’ group in Auckland last November. Although previously discussed between the Foreign Ministers, New Zealand police had ruled the protests to be lawful. In response, Mr. Luxon reaffirmed New Zealand’s commitment to free expression and noted the importance of not importing foreign political conflicts into its diverse immigrant communities. While such concerns are legitimate, raising them publicly risks deepening divisions within the 3,00,000-strong Indian diaspora and overshadowing growing strategic and economic ties. These sensitive issues may be better handled through diplomatic engagement in private. Ultimately, India and New Zealand stand to benefit from greater collaboration — particularly in trade, defence, and regional stability — as two democracies that “book-end” the Indo-Pacific.



WHAT'S ON THE AGENDA OF THE RAISINA DIALOGUE?

The story so far:

A month after this year's explosive Munich Security Conference, where U.S. Vice President J.D. Vance put Europe on notice, Delhi is set to host the annual Raisina Dialogue from March 17-19, where U.S. President Donald Trump's seismic foreign policy shifts are expected to be the big conversation points again.

What are the issues expected to make the headlines?

The 10th edition of the annual Raisina Dialogue will be inaugurated on Monday by Prime Minister Narendra Modi, where the chief guest, New Zealand Prime Minister Christopher Luxon will deliver the keynote address, with the theme "Kalachakra" (wheel of time). However, a big contingent from the U.S. is expected to take the centre stage, given the twists and turns in American policy under Mr. Trump — from the Ukraine war, the talks with Russia, the new tariff regime that threatens ties between the U.S. and countries around the world, including India, the U.S.' fraying relations with its NATO and European allies, uncertainty around the U.S.'s Indo-Pacific policy, and new statements on China and Taiwan.

Amidst the turmoil, U.S. Director of National Intelligence Tulsi Gabbard is leading a team to Delhi for an intelligence chiefs' conference at the weekend hosted by National Security Adviser Ajit Doval, and will speak at the Raisina Dialogue. Apart from Ms. Gabbard, the Special Assistant to U.S. President Trump and National Security Council official, Ricky Gill, and Senior Counsellor to Mr. Trump, James Carafano, who was a key figure behind the Republican campaign document "Project 2025", are also listed as speakers and are expected to defend the U.S.' moves.

A Quad panel with senior Navy leadership from the four countries, India, Australia, Japan and the U.S., is expected as India gears up to host the Quad leader summit this year, which is expected to see some announcements on expanding maritime cooperation.

What can be expected in Ukraine?

The Raisina Dialogue follows weeks of dramatic developments in the Russia-Ukraine war, including the showdown between Mr. Trump and Ukrainian President Volodymyr Zelenskyy in Washington, followed by rounds of U.S.-Russia talks and then U.S.-Ukraine talks about a ceasefire, which will no doubt be a major point of discussion at the dialogue, and on its sidelines. Eleven of the 20 Foreign and other Ministers arriving for the dialogue are from Europe, including Ukraine Foreign Minister Andrii Sybiha.

In 2024, the numbers were even more skewed, with chief guest Greek Prime Minister Kyriakos Mitsotakis and 15 of 21 Foreign Ministers present from Europe, making a concerted pitch for India to shift its position on Ukraine. This year, all eyes will be on discussions and debate that pit European leaders against those from the U.S., particularly Ms. Gabbard, who has in the past batted for better U.S.-Russia ties. However, Russian Foreign Minister Sergey Lavrov, who used to be a regular speaker, will not attend. At the Raisina Dialogue in 2023, Mr. Lavrov faced a barrage of questions over the war in Ukraine during a session, that got extremely heated over the question of Russia joining talks for a ceasefire.

Also on the list is International Atomic Energy Agency chief Rafael Grossi, who will be an important speaker on the war in Ukraine, and the possibility of reviving nuclear talks with Iran.



Who else is coming?

The speakers' list at the Raisina Dialogue serves as a good barometer of India's relations with various countries, and which countries participate are often as important as those who miss the event. According to the list released by the Ministry of External Affairs, the Foreign Ministers of Bhutan, D. N. Dhungyel; Nepal, Arzu Rana Deuba; and the Maldives, Abdulla Khaleel, will attend the meet. Mauritius' Foreign Minister, Dhananjay Ramful, will also be present.

Given tense ties with India's western neighbour, Raisina Dialogue does not invite Pakistani delegates. However, it is notable that no speakers from Bangladesh or representatives of the Yunus government are listed this year. The programme lists a speaker from China's Fudan University, which reflects the thaw in bilateral ties after the meeting between Mr. Modi and Chinese President Xi Jinping last October.

Another country with which India may see a thaw this year is Canada, given the change in leadership. The Director of the Canadian Security Intelligence Service, Daniel Rogers, who is in Delhi, could also attend the Dialogue. In addition, former Canadian Prime Minister Stephen Harper and former Australian Prime Minister Tony Abbott, both regular attendees, will be present.

Despite the Indian government's attempts at improving ties with West Asia (GCC) and South East Asia (ASEAN), both regions aren't well represented again, a trend visible for the last few years. The only exceptions are the Philippines' Secretary of Foreign Affairs, Enrique Manalo, and Thailand's Foreign Minister, Maris Sangiampongsa. Foreign Ministers from Ghana, Cuba, Peru, Antigua and Barbuda are the others attending from the Global South.

How did the Raisina Dialogue start?

Launched in 2016 by the Ministry of External Affairs as a "flagship Indian international dialogue", the Raisina Dialogue aims to bring together leaders and thinkers from around the world. Envisioned by the government as a potential rival to the Munich Security Conference and Singapore's Shangri-La Dialogue, the Indian version is named after the Raisina Hills, where Rashtrapati Bhavan, key Ministries and Parliament are located in the capital.

INDIA PLANS TO ENTIRELY FENCE ITS 1,643-KM-LONG BORDER WITH MYANMAR IN 10 YEARS

The 1,643-km-long border with Myanmar will be entirely ringed with an "anti-cut, anti-climb" fence in the next 10 years, according to government officials and a parliamentary panel report. The fencing project was announced by Union Home Minister Amit Shah in February 2024 and the work has gathered pace in the past three or four months, officials said. From April 1-December 31, 2024, an amount of ₹114.09 crore has been spent on constructing the fence and the company operating bases (COBs) for the Assam Rifles, which is responsible for guarding the Myanmar border. "The technology is entirely indigenous and developed by our own engineers. It has anti-cut and anti-climb features that will deter illegal infiltration," said a senior official of the Assam Rifles.

Free Movement Regime

India and Myanmar share an unfenced border, which runs along four States. Both countries have a unique arrangement called the Free Movement Regime (FMR), which allows people to visit families residing within 10 km on both sides of the border without visas or a passport.



Former Manipur Chief Minister N. Biren Singh had attributed the ongoing ethnic violence to the unregulated movement of people from across the border.

Till last year, only 10 km of the border near Moreh in Manipur had been fenced.

A March 10 parliamentary panel report said that the Cabinet Committee on Security (CCS) had in March 2024, approved a proposal worth ₹31,000 crore to fence the Indo-Myanmar border and to construct roads to provide better connectivity to company operating bases (COBs) of the Assam Rifles.

“For creating infrastructure along the IMB (India-Myanmar Border), the CCS granted in-principle approval for construction of fence and 64 border roads. Construction of fence and road of 1,610.2 km along IMB in 10 years and its maintenance for five years, at cost of ₹20,264.4 crore; construction of 58 roads (1,467.5 km) to connect the COBs of Assam Rifles and six approach roads (78.7 km) to IMB in 10 years and its maintenance for five years, at cost of ₹10,767.5 crore (total cost ₹31,031.9 crore),” the report said.

The model is likely to be replicated along the international border with Pakistan and Bangladesh, the official said.

The fencing proposal has faced stiff opposition from Naga and Kuki-Zo bodies, who say that it will disrupt ethnic and familial ties for people living on both sides of the border. “Surveillance cameras will also be placed along the fence to monitor the area better. The border gates and the fencing will ensure that people who cross the border are accounted for. So far around 9,000 people have used the border gates to enter Manipur. There have been very few cases of overstaying,” said another government official.

HOW A 1958 RULING SHAPED THE DEBATE ON SLAUGHTER BANS

In a 1956 ruling of the Supreme Court, Justice Vivian Bose said the Constitution was not just for governments, lawyers and politicians but also “for the butcher, the baker and the candlestick maker”.

- It was a prescient statement — the following year, nearly 3,000 butchers came knocking on the doors of the Supreme Court. Their case, Mohammad Hanif Quareshi v State of Bihar, marked a watershed moment for the young Republic as it sought to negotiate the centuries-old, communally fraught issue of cattle slaughter within the framework of India’s new Constitution.
- In his book, A People’s Constitution, Rohit De, Associate Professor of History at Yale University, wrote that more than 3,000 individually named petitioners from at least 90 villages and towns from Bombay, Madhya Pradesh, Uttar Pradesh, and Bihar “signed or put their thumbprints on the petition”.
- Though they were mostly Muslim, Quareshi and the others identified themselves as “citizens of India, Muslims by religion” who belonged to a caste of butchers, hide traders, gut merchants, and leather workers.
- On November 24, 1948, after much debate, the Constituent Assembly bargained for a consequential settlement on the issue of cattle slaughter. The demand of a handful of members from the northern provinces was to make protection against cow slaughter a fundamental right, much like the protection against untouchability. Dr B R Ambedkar, the chairman of the Drafting



Committee, prevailed and it was agreed that “fundamental rights deal only with human beings and not animals”.

- On the right to religion, cow slaughter was held not to be a core tenet of the religion while the court cited “interests of the general public” as a reasonable restriction on the right to trade and profession under Article 19(1)(g).
- While the 1958 ruling was a setback for the butchers who went to Court, it also required states to amend their laws to allow procedural clarity on what animals could be deemed “fit for slaughter”. States amended the laws but also tried to circumvent the verdict. After a series of revisions, the Supreme Court in the 2005 ruling in *State of Gujarat v Mirzapur Moti Kureshi Kassab Jamat* virtually upheld a near-total ban on cow slaughter.

Do You Know:

- Quareshi, from Patna’s Sultanganj, lent his name as the lead petitioner in the batch of cases that challenged state laws, including the Bihar Preservation and Improvement of Animals Act, 1955. The Bihar law and the other state laws prohibited the slaughter of cows, calves, bulls, bullocks and “sheep-buffaloes”. All these laws drew upon the imagery of the cow as a symbol of resistance against British rule, and were enacted in the aftermath of the country’s bloody Partition.
- The petitioners challenged it on three main grounds: that they violated their right to equality (Article 14) as the laws separated bovine butchers from other butchers; their right to practise religion (Article 25); and the right to practise any profession or to carry on any occupation, trade or business (Article 19(1)(g)). Prof De noted that the argument for freedom of religion “was the last of the four challenges in the petition and took up a single paragraph.”
- On April 23, 1958, a five-judge Supreme Court Bench headed by then Chief Justice of India (CJI) Sudhi Ranjan Das partially upheld the state bans, carving out key exceptions. The court mainly reframed the issue from its communal overtones to bovine economics.
- “In our view the ban on slaughter of she-buffaloes, breeding bulls and working bullocks (cattle and buffalo) which are useful is reasonable but of those which are not useful is not valid. The question as to when a she-buffalo, breeding bull or working bullock (cattle and buffalo) ceases to be useful and becomes useless and unserviceable is a matter for legislative determination,” the court said. Essentially, the court said that cow slaughter was prohibited for economic value and not entirely religious sentiments.

HOW DO HABITUAL OFFENDER LAWS DISCRIMINATE?

The story so far:

Months after the Supreme Court of India questioned the need for decade-old laws that have classified a section of criminals as “habitual offenders” across India, the Government of India has revealed in Parliament that such laws continue to operate in as many as 14 States and Union Territories.

What has the SC said about the matter in the past?

In October last year, while deciding a matter on caste discrimination within Indian jails, the Supreme Court of India had called into question the very basis of the “habitual offender”



classification, noting it was “constitutionally suspect” and used to “target members of denotified tribes”.

The recent information revealed in the Lok Sabha on March 11 by the Union Social Justice Ministry showed that some States like Gujarat have argued for the continuation of the law given that the “intent” of its use is not suspect, while others are in the process of discontinuing its application, like Punjab. States like Haryana have already repealed it. The government has said that the Union Ministry of Home Affairs communicates with States on these laws and the status of their repealing from time to time.

What is the origin of the ‘habitual offender’ classification?

According to the National Commission for Denotified, Nomadic, and Semi-Nomadic tribes headed by Bhiku Ramji Idate, which submitted its report in 2017, the beginning of “criminalising” communities in India began with Regulation XXII of 1793, which gave magistrates “summary powers” to put to work or imprison certain communities or tribes based on suspicion alone. The Indian Penal Code of 1860 and the Criminal Procedure Code of 1861 further set up the mechanism to maintain a register of “dacoits and thugs”, before culminating it in the Criminal Tribes Act (CTA) of 1871. It was through this Act, the Idate Commission notes, that “the phrase ‘criminal tribe’ was first concocted, and the system of registration began”. The law provided for “a gang, a tribe, or a class of people” to be declared criminal, and was strengthened throughout the next few decades. In 1924, the law was applied to all of colonial India which increased the number of communities declared “criminal” exponentially, according to the Idate report.

Just as the Constitution of India was being adopted, the government’s Criminal Tribes Act Enquiry Committee Report (1949-50) was published, which recommended the repealing of the CTA, and encouraged “central legislation applicable to all habitual offenders without any distinction based on caste, creed, or birth”. In 1952, based on this report, the Government of India repealed all criminal tribes laws across the country, leaving the communities notified under these laws to be classified as “denotified, nomadic, and semi-nomadic” (DNT, NT, SNT) tribes.

By this time, States had already started enacting “habitual offender” laws across the country, such as the Madras Restriction of Habitual Offenders Act, 1948, which was extended to Delhi in 1951. Rajasthan passed a similar law in 1953, and over the next two decades more States — Andhra Pradesh, West Bengal, Karnataka, Goa, Himachal Pradesh, Uttar Pradesh, etc. — adopted laws on “habitual offenders”. All of them moved away from the premise of classifying communities as “prone to crime”, by defining a “habitual offender” in terms of the convictions they have had.

However, even though the CTA Enquiry Report had led to the reframing of habitual offender laws, by centering individuals over communities, more than a decade later, when the Lokur Committee in 1965 was looking at denotified tribes, it saw them as communities with an “anti-social heritage”. Some specific communities were even described as having an “affinity for crime”.

What were some of the crimes which made one a ‘habitual offender’?

Habitual offender laws have a schedule of crimes for which the classification could be invoked. Across States, this included crimes like “being a thug”, “belonging to a gang of dacoits”, “living on the earnings of prostitution”, and half-a-dozen entries on “lurking”.

Registers were maintained, and rules and regulations were formulated by States on how ‘habitual offenders’ were to be treated within prisons, leading to jail manuals across the country adopting



the language of “habitual offenders”, with some of them explicitly allowing for erstwhile “criminal tribe” community members to be designated as “habitual offenders” (for example in Rajasthan). But in 1998, the custodial death of Budhan Sabar, a member of a denotified community in West Bengal, led to national outrage over the concept of “habitual offenders” and how it was being used by the police.

When did change start?

From the outrage over Mr. Sabar’s death, an advocacy group was formed known as the Denotified and Nomadic Tribes Rights Action Group (DNT-RAG) by writers Mahasweta Devi and G.N. Devy, who also spearheaded the launching of a magazine named after Budhan, which wrote on issues faced by these communities. The DNT-RAG studied the conditions of denotified tribes and prepared a report.

In 1998, the DNT-RAG wrote to the National Human Rights Commission (NHRC) in India and the United Nations Secretary General, noting that even though the CTA had been repealed, “the police as well as the general public continue to treat most of these unfortunate communities as ‘born criminals’ and ‘habitual criminals’”, citing the habitual offender law in Bombay. “Every day brings in instances of mob-lynching, arson, and police atrocities enacted upon the innocent and helpless DNTs,” the letter said.

Reacting to this letter, the NHRC formed an Advisory Group which in 2000, concluded that these “habitual offender” laws can be repealed. Since then, every National Commission that has dealt with the issue of DNT, NT, SNT communities has mentioned the adverse effect of “habitual offender” laws on these communities.

In March 2007, the United Nations Committee on the Elimination of Racial Discrimination noted the way “habitual offender” laws were being applied and called for its repeal. In 2008, the National Commission on DNT, SNT, NT headed by B.S. Renke noted the negative effect of the laws on the lives of these communities.

In 2014, the High-Level Committee of the Tribal Affairs Ministry, headed by Professor Virginius Xaxa noted, “The tag of criminality attached to DNTs and to the nomadic way of life of nomadic tribes persists to the present day. The explanation lies, in good measure, in the Criminal Tribes Act being replaced in many States by the Habitual Offenders Act.” In 2020, journalist Sukanya Santha reported on widespread caste-discrimination within Indian prison systems, including the treatment meted out to those who have been classified as “habitual offenders”, based on which she filed a petition in the Supreme Court.

How have States reacted?

Deciding this case in October 2024, a Bench headed by then-Chief Justice D.Y. Chandrachud had noted that while “habitual offender” laws were not the subject of the matter specifically, it felt compelled to make some observations.

It said, “The ‘habitual offender’ legislations were enacted to replace the Criminal Tribes Act. However, in States such as Rajasthan, they were used to refer to members belonging to criminal tribes/denotified tribes. Applying that logic, several Prison Manuals/Rules have also referred to ‘habitual offender’ to mean members of Denotified Tribes or wandering tribes....This cannot be accepted. A whole community ought not to have either been declared a criminal tribe in the past



or a habitual offender in the present. It would not be wrong to say that the classification of 'habitual offender' has been used to target members of Denotified Tribes."

Further down in the judgment, the Supreme Court went on to "urge" the State governments to review whether there remained any need for such "habitual offender" laws in the country.

According to the latest information provided by the States and UTs to the Ministry of Home Affairs, Punjab has said that it has not implemented the law for over five years and neither had any register been maintained in this time. Similarly, the Odisha government has said that no case had been registered under the law in the last five years and Andhra Pradesh has said that no one in their jails currently was imprisoned under the law.

Some States like Goa have argued that since there are no DNTs in their State, there is no scope of the law being misused to target them and have indicated that they may be allowed to continue using them. Gujarat has opined against repealing it saying it "does not intend" to harass. Telangana has called the law preventative, whereas Uttar Pradesh has said that since all "habitual offender" provisions had been covered under their Goondas Act, it does not matter if it is repealed.

According to the latest available records of the National Crime Records Bureau (for 2022), about 1.9% of India's 1.29 lakh convict population have been classified as "habitual offenders", with the highest proportion seen in Delhi, where 21.5% of convicts are classified as such.

SC TO EXAMINE PETITION ON CAG APPOINTMENT PROCESS

The Supreme Court on Monday decided to examine a plea challenging the sole prerogative of the Centre, acting through the President, to appoint the Comptroller and Auditor General of India.

Appearing before a Bench headed by Justice Surya Kant, advocate Prashant Bhushan said absolute control by the Centre over the appointment process of a Comptroller and Auditor General (CAG) would gravely affect the independence of a Constitutional authority, which was a watchdog over the financial expenditure and accountability of the Union and State governments and even the Panchayati Raj institutions.

The petition said the CAG must be appointed by the President in consultation with a non-partisan selection committee comprising the Prime Minister, the Leader of the Opposition and the Chief Justice of India.

The petitioner, Centre for Public Interest Litigation, also represented by advocate Cheryl D'Souza, referred to recent "deviations" in the CAG's work, including reports on the "pause" in Maharashtra audits, a steady decline on audits on the Union government, among others.

Mr. Bhushan said Article 148(1) of the Constitution equates the CAG with a Supreme Court judge. A CAG can be removed only for the same reasons and in the same manner as an apex court judge.

Issuing notice to the Union government, Justice Kant, however, asked whether a judicial intervention would amount to re-writing Article 148, which deals with the appointment of a CAG. Article 148, like in the case of Supreme Court judges, is silent about the procedure of appointment. Justice Kant also remarked that one should be able to "trust institutions".

Mr. Bhushan argued that giving exclusive control to the Executive over appointments to key Constitutional bodies would be a sure recipe for loss of independence.



59 SUB-CASTES DIVIDED INTO 3 GROUPS: TELANGANA ASSEMBLY PASSES SC BILL

The Telangana Legislative Assembly on Tuesday passed the Scheduled Castes (Rationalisation of Reservation) Bill, 2025, paving the way for SC sub-categorisation in reservation.

- As per the Bill, tabled by minister Damodar Rajanarasimh, the Scheduled Castes will be divided into three categories – Group I will get 1% reservation within the 15% quota for SCs; Group II will get 9% reservation; and Group III will get 5% reservation.
- Calling it a historic day, Telangana Chief Minister A Revanth Reddy said, “Many activists have sacrificed their lives during the struggle for SC sub-categorisation”. He was referring to the protests by the Madiga Reservation Poratta Samithi (MRPS). Madigas form the SC subcaste that will get 9% reservation. The Chief Minister said families of those who lost their lives in the “struggle for SC subcategorisation” will be compensated. “Fifty-nine sub-castes have been divided into three groups and distributed with 15% reservations among them. The government will also support the families of those who lost their lives during the struggle for SC classification. Those families will be given priority in the allotment of Indiramma houses and Rajiv Yuva Vikasam schemes,” he said.
- The Chief Minister also said that SC quota would be enhanced as per the 2026 census. “Will take the responsibility of increasing reservations and implementing the same,” he said.

Do You Know:

- In 1975, the Punjab government issued a notification dividing its 25% SC reservation at that time into two categories. In the first category, seats were reserved solely for the Balmiki and Mazhbi Sikh communities, which were and continue to be considered two of the most economically and educationally backward communities in the state. As a result, they were to be given first preference for any reservations in education and public employment.
- The second category consisted of the rest of the SC communities, which didn't get this preferential treatment. It was one of the first instances of existing reservations being 'sub-classified' by a state to provide benefits to certain communities beyond what was already being offered to scheduled caste communities as a whole. While the notification remained in force for nearly 30 years, it ran into legal hurdles when in 2004, a five-judge constitution bench struck down a similar law introduced by Andhra Pradesh in 2000. In 'E.V. Chinnaiah v State of Andhra Pradesh', the Supreme Court struck down the Andhra Pradesh Scheduled Castes (Rationalisation of Reservations) Act, 2000 for being violative of the right to equality. The law contained an expansive list of scheduled caste communities identified in the state and the quota of reservation benefits provided to each of them.
- On August 1, 2024, In a landmark 6-1 majority ruling, a seven-judge Constitution Bench of the Supreme Court held that Scheduled Castes do not constitute a socially homogeneous class and can be sub-classified by States for the purpose of providing reservation to the less privileged among them.

ANTHROPOLOGISTS CALL FOR OVERHAUL OF CRITERIA USED FOR IDENTIFYING STS

Top anthropologists have called for a paradigm shift in the way India defines a “tribe”, overwhelmingly supporting the idea that a community's classification should be assessed on a “spectrum of tribalness” rather than the binary question of whether or not it is a tribe.

4TH FLOOR SHATABDI TOWER, SAKCHI, JAMSHEDPUR



This was the broad consensus reached at a recent Indian Anthropology Congress, where the leadership of the Anthropological Survey of India (AnSI) and senior officials of the National Commission for Scheduled Tribes (NCST) were among the participants of a round-table discussion on the topic of “Developing a scale to distinguish tribal populations from caste-based and ‘mainstream’ communities”.

Hundreds of communities across the country are currently demanding inclusion in the list of Scheduled Tribes, in order to access the benefits of reservation in education and jobs, and governmental aid.

The immediate trigger for the current ethnic conflict in Manipur, for instance, lay in the Meitei community’s demand to be designated a Scheduled Tribe (ST), which is opposed not just by the Kuki-Zo tribes in the State but also the Naga tribes, which are not a part of the conflict.

The Union government has maintained that the criteria it uses to classify communities as ST are the ones set by the Lokur Committee in 1965. These check for “primitive traits, distinctive culture, geographical isolation, shyness of contact with the community at large, backwardness”. Over the past decade, academics and expert panels inside and outside the government have termed these criteria “condescending”, “obsolete”, “derogatory”, and “meaningless”.

“The existing criteria may have made sense when they were made but they are losing meaning now. And virtually no community meets 100% of these criteria. So, instead of finding criteria that can be met fully, the idea is to see if we can build a tool to assess the ‘tribalness’ of the community,” AnSI Director B.V. Sharma told The Hindu.

Concept note

Noting the “persistent difficulty” in defining tribal populations and “the need for a systematic tool to ensure accurate classification”, the round-table’s concept note emphasised that “this initiative aligns with constitutional mandates and will assist tribal research institutions (TRIs) in preparing ethnographic reports for policymaking.”

This shift in understanding how to define “tribes” will invariably require extensive deliberations on overhauling the existing criteria for classifying communities as Scheduled Tribe, the anthropologists and officials said, adding that the idea is to build a “matrix or spectrum” of as many detailed characteristics as possible, with a weight assigned to each, so that a “degree of tribalness” of the community can be determined.

Dr. Sharma explained that any new scale to define tribes in India will have to consider a host of characteristics. “It may not have to be restricted to just five. It could be as many as 150 indicators,” he said

“When an ethnographic report (ER) is prepared to assess claims of inclusion, some guidelines must be there. Then, officials doing the ER can keep in mind what is required,” he said.

India currently has more than 756 entries in the list of Scheduled Tribes. Since the previous Census was conducted in 2011, at least 27 communities have been added to the ST list – five as main entries and 22 as sub-entries – even as hundreds of other communities seek to be added to the list, these demands leading to inter-community conflicts in some cases.

Now, instead of looking at the traits as set out by the Lokur Committee, scholars, experts, and officials are thinking about creating indicators, both tangible and intangible, that can be



“instinctively” agreed upon as “tribal”. And this time, the focus is on social institutions such as marriage, kinship, classification of relatives, rituals in practice, language, and the “materiality of cultural indicators”, including headgear or weaponry.

Civilisational approach

In building such a tool, Dr. Sharma said that India will be able to also account for how communities like to see themselves as opposed to how they have been studied for long – as the “other”. S.M. Patnaik, who heads Delhi University’s Anthropology Department and participated in the round-table, added that there was a need to move from the “evolutionary” approach used in places such as Australia and China to a more “historical or civilisational” approach.

A CENTURIES-OLD TEMPLE BAN IS BROKEN, BRINGING A HEARTENING AND RESONANT MOMENT

On March 13, as Mamata Das, Santanu Das, Lakkhi Das, Puja Das, and Sasthi Das — all members of the Das Dalit sub-caste — climbed the stairs of the Gidheswar temple in the Purba Bardhaman district of West Bengal, a discriminatory practice that had persisted for more than 200 years was brought to a welcome end. The Gidheswar temple entry also showed how breakthroughs can happen when the administration acts to uphold the constitutionally enshrined rights of citizens. Dalit families of Gidhagram village have been barred from entering the temple for centuries. On February 24, just days before the festival of Mahashivratri, they wrote to the district administration seeking intervention. Despite protests from the upper caste communities, who cited the “tradition” of the village as grounds for denying them entry, police and civil volunteers ensured that the Dalit families could offer puja safely.

Given that the mainstream political narrative in West Bengal seeks to deny or downplay caste discrimination, this incident also highlights a historical silencing of marginalised voices. In response to the Mandal Commission’s recommendations, West Bengal Chief Minister Jyoti Basu had said: “In West Bengal, there are only two castes — rich and poor.” In 1994, the most widely read Bengali language newspaper questioned the significance of Dalit literature when the Bangla Dalit Shahitya Sanstha was established. A survey by Pratichi Trust in 2001 revealed that in many schools across West Bengal, Scheduled Caste students were forced to sit separately. Despite such instances, the hegemony of Bhadraklok — the dominant upper-caste middle class of the state — attempted to paper over the reality of caste discrimination. According to the 2022 NCRB data, the number of reported cases of caste atrocities in West Bengal stands at 109, significantly lower than the national peak of 12,287 in Uttar Pradesh. However, this figure does not provide the complete picture, as it overlooks factors such as everyday casteism and the near-hegemonic control of the Bhadraklok. Unlike Maharashtra, Uttar Pradesh, Bihar, or Tamil Nadu, Bengal did not experience radical caste mobilisation. The lack of an alternative Dalit politics further contributed to the invisibility of caste. Incidents like the Gidheswar temple entry pierce this entrenched myth.

In 1930, Babasaheb Ambedkar led a protest outside Kalaram temple in Nashik to secure Dalit entry. If even after 75 years of independence, similar concerns persist, they call for a wider questioning and introspection. Gidhagram has shown that when the administration doesn’t give in to the demands of the powerful upper castes and remains steadfast in its commitment to uphold constitutional guarantees of equality for all, a “casteless” society can draw closer as a reality, rather than remaining a convenient myth.



FREE AND FAIR

The Election Commission of India (ECI) seems to have softened its stand about disclosing absolute numbers of booth-wise votes cast in elections. Last year, when the question arose in the midst of the multi-phase general election, the ECI took the position that it had no legal mandate to disclose details of Form 17-C, part one, which contains the total number of electors in each booth and those who had actually voted, to anyone other than the candidate or its polling agent. In a recent hearing, it has said the Chief Election Commissioner, Gyanesh Kumar, who took over recently, is open to meeting representatives of organisations and individuals who have sought a direction to the ECI to upload scanned, authenticated and legible copies of Form 17-C on its website. The Supreme Court of India has asked Trinamool Congress Member of Parliament Mahua Moitra and representatives of the Association for Democratic Reforms (ADR) to give a representation to the ECI and seek a meeting. While it may not mean that the ECI has already agreed to make absolute numbers of voters universally available, it may result in evolving a system of disclosure about turnouts, both in terms of numbers and percentages. In 2024, the ECI did release some details about turnout through its voter turnout app, but it also became a source of endless speculation as the percentages given were seen to be unusually higher than what was disclosed at the close of polling.

The prevalence of a difference of five to six percentage points between the turnout declared on polling day and subsequently revised figures, based on inputs from all booths, was noted at the end. This is normally explained as the result of a delay in collation of data from all booths, including those located in far-flung areas. However, the petitioners before the Court argue that Form 17-C is collected by available booth agents by hand, and it would not be a major problem for election officials to scan and upload it within 48 hours. The main grouse of political parties and activists is that the discrepancies, in the absence of the absolute number of votes cast but with only turnout percentages in hand, would raise suspicions about the whole process when the final results are released. The ECI has done well to offer to meet the petitioners on this question. There can be no dogmatic opposition to a procedural step to reduce the apprehension about any election being less than fair. It is futile to hold the position that every step demanding greater transparency in the electoral process is aimed at undermining its integrity or casting the process in a bad light. There ought to be a constant reassessment of existing procedures and practices to increase transparency and reduce the time taken to do so.

VOTER, AADHAAR DATABASES WILL LINK, OPT-OUT OPTION TO STAY

The Election Commission of India (ECI) will work with the Unique Identification Authority of India (UIDAI) to link its voter records with the Aadhaar database, while the Law Ministry will amend Form 6B to clarify that providing Aadhaar details remains voluntary, though voters declining to share this information must explain their reasons, The Indian Express has learned.

- These decisions were made at a high-level meeting held on Tuesday between senior officers of the ECI and the Home Ministry, Law Ministry, IT Ministry and UIDAI.
- The meeting, the first one between the Commission and the Union Government this year, was attended by Home Secretary Govind Mohan; MEiTY Secretary S Krishnan; Legislative Department Secretary Rajiv Mani and UIDAI CEO Bhuvnesh Kumar.
- It was held against the backdrop of the Opposition INDIA bloc parties alleging irregularities in electoral rolls in different parts of the country.

4TH FLOOR SHATABDI TOWER, SAKCHI, JAMSHEDPUR



- In an hour-long discussion, the ECI and government officials are learned to have discussed the pros and cons as well as the legalities associated with linking the voter database with that of Aadhaar.
- While the Commission's press statement on Tuesday's meeting did not categorically state this, it said linking will be done in accordance with Sections 23(4), 23(5) and 23(6) of the Representation of the People Act, 1950 and that "technical consultations between UIDAI and the technical experts of ECI are to begin soon".

Do You Know:

- Sections 23(4), 23(5) and 23(6) of the RP Act 1950 deal with the Electoral Registration Officer's authority to request Aadhaar for voter identity verification, the process for existing voters to voluntarily submit Aadhaar numbers, and protections ensuring that no one can be denied voter registration or removed from electoral rolls for failing to provide Aadhaar information.
- Form 6B lacks options for electors to abstain from providing Aadhaar, offering only two choices: either provide Aadhaar or declare, "I am not able to furnish my Aadhaar because I don't have Aadhaar number." This will be amended but voter will have to offer an explanation why she is not providing her Aadhaar.
- The change will be in line with ECI's commitment before the top court (in G Niranjan Vs Election Commission of India) in September 2023 that it is looking into issuing "appropriate clarificatory changes in the forms introduced for that purpose" to ensure that voters understand the exercise is voluntary.
- In response, the Election Commission acknowledged the problem, explaining that some state Chief Electoral Officers had incorrectly utilised alphanumeric sequences when generating EPIC numbers. The Commission clarified that identical card numbers don't necessarily indicate fraudulent voters, as other identifying information —such as demographic details, constituency assignment, and polling station — remain distinct for each individual.

WHY ARE ELECTORAL REFORMS NECESSARY?**The story so far:**

The Election Commission (EC) has invited political parties to discuss strengthening the election process. This is in wake of the allegations of manipulation of electoral rolls during the recently concluded assembly elections and issues raised with respect to duplicate Electoral Photo Identity Card (EPIC) numbers in different States.

What are the legal provisions?

Article 324 of the Constitution provides that the superintendence, direction and control of the preparation of electoral rolls for, and the conduct of, all elections to the Parliament and State legislature shall be vested in the EC. The preparation of electoral rolls is governed by the provisions of the Representation of the People Act, 1950 and related rules, including Registration of Electors Rules, 1960.

The voting process has undergone tectonic changes since the first general election in 1952. In the first two general elections of 1952 and 1957, a separate box was placed for each candidate with their election symbol. Voters had to drop a blank ballot paper into the box of the candidate whom



they wanted to vote for. It is only from the third general election in 1962 that ballot papers with names and symbols of candidates was introduced. Subsequently, since the 2004 general elections to the Lok Sabha, Electronic Voting Machines (EVM) have been used in all constituencies. Since 2019, EVMs have been backed by 100% Voter Verifiable Paper Audit Trail (VVPAT) slips in all constituencies.

What are the issues?

There have been a series of issues raised in the past with respect to the voting and counting process. First, there were demands through a Public Interest Litigation (PIL) for reverting to paper ballot papers which was dismissed by the Supreme Court in April 2024. Second, the same PIL demanded 100% matching of VVPAT with EVM count, which at present is carried out for five machines per assembly constituency/segment. The Supreme court, while dismissing this demand as well, had directed that the burnt memory of microcontrollers of 5% of EVMs, which includes that of control units, ballot units, VVPATs, in every assembly segment can be checked and verified by a team of engineers of the EVM manufacturers in case of any suspicion of tampering. The exercise needs to be initiated via a written request from candidates who are placed second or third in a constituency, within seven days of the declaration of election results.

Third, there were allegations of manipulation of electoral rolls in the run up to the Maharashtra and Delhi Assembly elections. The Opposition parties alleged that large number of bogus/fake voters were added to the electoral roll to benefit the ruling party at the Centre. The fourth and current issue relates to identical EPIC numbers for voters belonging to different States like West Bengal, Gujarat, Haryana and Punjab. Opposition parties such as the Trinamool Congress allege that it vindicates their claim of bogus voters being included in the voters' list. The EC has explained that duplication may have arisen because of the earlier decentralised system for allotting EPIC numbers before shifting to the centralised database on the ERONET platform. It clarified that irrespective of the EPIC number, an elector can cast his/her vote only in their designated polling station in their State or Union Territory.

Apart from the above issues in the election process, there are significant issues related to the campaign process that have to be addressed. First, 'Star Campaigners' of most parties have been guilty of using inappropriate and abusive words against leaders of other political parties, appealing to caste/communal feelings of electors, and making unsubstantiated allegations. Second, candidates of all major political parties breach the election expenditure limit by a wide margin. Further, there are no limits on political party spending during elections. The Centre for Media Studies has estimated that the expenditure during the 2024 Lok Sabha elections was close to ₹1,00,000 crore by various political parties. Such inflated election expenditure fuels corruption resulting in a vicious cycle. Third, as per the report of the Association of Democratic Reforms, the issue of criminalisation of politics has almost reached its nadir with 251 (46%) of the 543 elected MPs in 2024, having criminal cases against them. Of them 170 (31%) face serious criminal charges including rape, murder, attempt to murder and kidnapping.

What are the required reforms?

Free and fair elections is part of the basic structure of our Constitution as declared by the Supreme Court in various cases.

With respect to the electoral process of voting and counting, the following reforms need to be considered and implemented. First, as regards the EVM and VVPAT related aspects, the sample size for the matching of EVM count and VVPAT slips should be decided in a scientific manner by



dividing each State into large regions. In case of even a single error, VVPAT slips should be counted fully for the concerned region. This would instil statistically significant confidence in the counting process. Further, as recommended by the EC in 2016, in order to provide a degree of cover for voters at the booth level, 'totaliser' machines can be introduced that would aggregate votes in 14 EVMs before revealing the candidate-wise count. The candidates placed second or third should also utilise the direction of the Supreme Court to demand the verification of 5% of EVMs in each assembly segment in case of any suspected tampering. If any issue is identified, it should be suitably addressed and if there are none, it would put to rest the political speculation.

Second, to address the apprehension of inclusion of fake voters and duplicate EPIC cards, the process of linking citizens' Aadhaar number with EPIC cards may be considered after detailed discussions with all stakeholders and dispelling concerns around right to privacy. Meanwhile, the EC should remove any duplicate voter ID numbers in the electoral roll across States and ensure unique EPIC numbers.

Equally important, if not more, are the reforms needed in the campaign process. First, the EC should be authorised to revoke the 'Star Campaigner' status of a leader, in case of any serious violation of the Model Code of Conduct (MCC), thereby depriving the party candidates of expenditure relief for their campaigns. Under Paragraph 16A of the Symbols order, the EC has the power to suspend or withdraw the recognition of a recognised political party for its failure to observe MCC or follow lawful directions of the Commission. Strict action under this provision against bigger parties would have a salutary effect in ensuring adherence to the MCC. Second, with respect to election expenditure, the law must be amended to explicitly provide that 'financial assistance' by a political party to its candidate should also be within the limits of election expenditure prescribed for a candidate. There should also be a ceiling on expenditure by political parties. Third, the Supreme Court direction to candidates as well as political parties to issue declarations about criminal antecedents, at least three times before election, in a widely circulated newspaper in the locality and in electronic media, should be strictly enforced. This would enable a discerning voter in exercising a well-informed choice.

The EC and various political parties should engage in a meaningful discussion on all these aspects so that the campaign and electoral processes instil confidence in voters at large.

PAST AS A PRELUDE

There is ample empirical evidence that riots in India are often orchestrated by vested interests and are not spontaneous eruptions of social tensions. It would therefore be inaccurate to attribute the violence in Nagpur, which left dozens injured, solely to rumour-mongering or impulsive reactions. For days since the Budget session began on March 3 in Maharashtra, the ruling right-wing parties have persistently invoked the legacy of Mughal emperor Aurangzeb as a political talking point. That a medieval ruler remains a recurring subject in contemporary political discourse not only highlights the misplaced priorities of governance but also raises suspicions that these controversies are being deliberately manufactured to distract from pressing livelihood issues. The evidence supports this view — Maharashtra, its rural regions in particular, is grappling with inflation, farmer suicides, and economic distress. Yet, instead of addressing these urgent concerns, the political machinery appears focused on stoking public discord through inflammatory rhetoric, manipulating communal loyalties for electoral gains. These tactics were evident during the recent Assembly election campaign, where prominent leaders of the Bharatiya Janata Party (BJP) and its allies repeatedly invoked Aurangzeb as a campaign issue. The intent behind this rhetoric was clear: a dog whistle designed to mobilise the majority community by

4TH FLOOR SHATABDI TOWER, SAKCHI, JAMSHEDPUR



casting Muslims as inheritors of a long-dead ruler's legacy. Research indicates that riots are less likely to occur in societies where interfaith civic engagement is strong. The fact that riots erupted in Nagpur — a city with significant political and historical importance — stands as an indictment of the ruling establishment, which claims to represent all communities.

Also, the recent box office success of Chhaava, a film depicting the historical conflict between the Marathas under Chhatrapati Sambhaji and the Mughals under Aurangzeb, has fuelled the communal discourse. However, Chief Minister Devendra Fadnavis's assertion that the film's popularity triggered the unrest is a convenient deflection — one that absolves the government of responsibility for fostering an atmosphere of hostility through its recurring rhetoric. For Maharashtra to regain its stature as a leader in comprehensive development, its government must shift focus from divisive narratives to real socio-economic challenges. Civil society, too, must push back against communal forces attempting to exploit historical figures for cynical political ends. Only by resisting these polarising tactics can the State move towards genuine progress.

WHEN SHIVAJI'S GRANDSON VISITED AURANGZEB'S TOMB

"Calls for the demolition of Mughal emperor Aurangzeb's tomb in Khuldabad, Chhatrapati Sambhajnagar district, have gained traction of late, with Maharashtra CM Devendra Fadnavis leading the charge. Besides Satara MP Udayanraje Bhosale, the descendant of Maratha king Chhatrapati Shivaji Maharaj, labelling Aurangzeb a "thief", Chhaava, a recently released film that graphically depicts Maratha king Sambhaji Maharaj's execution, has fuelled the demolition demand."

- "However, this demand stands in stark contrast to the approach adopted by the Maratha rulers of the past. During the Maratha Confederacy from 1674 to 1818, there existed a more nuanced relationship with Mughal monuments. The Marathas, while asserting their own political and cultural identity, also maintained a respectful engagement with these structures. Historical records mention Chhatrapati Shahu I, the fifth ruler of the Maratha Empire and Shivaji's grandson, visiting Aurangzeb's tomb to pay his respects."

- "Aurangzeb, the sixth Mughal emperor, passed away on March 3, 1707, at the age of 88 in Ahmednagar, present-day Maharashtra. His death marked the conclusion of his 49-year reign, with the last 25 years dominated by fierce battles against the Marathas, led by Shivaji. Despite the constant warfare, Aurangzeb developed a deep spiritual connection with a region called Rauza, located just 26 km from modern-day Aurangabad. Known for its large number of Sufi saints, it was in this area that Aurangzeb sought solace during his turbulent reign."

"In his will, Aurangzeb explicitly expressed his desire to be buried near the shrine of Sufi Zaynuddin Shirazi. Though he passed away in Ahmednagar, his body was transported to Khuldabad, located 136 km away, and laid to rest in accordance with his wishes. While the place was originally called Rauza, it was later renamed Khuldabad, meaning "heavenly abode", as a tribute to Aurangzeb, who was posthumously referred to as "Khuld Makaan" or "the one whose abode is heaven/eternity"."

- "Aurangzeb's tomb remains modest...The Archaeological Survey of India (ASI) describes the tomb as follows, "The existing gateway and domed porch were added in 1760 AD. The floor is of marble, a neat railing of perforated marble is on three sides, and the wall of the dargah forms the fourth side. It was erected by the Nizam of Hyderabad. Only a patch of earth with a small sabza plant remains on top, and it is roofed only by the vault of the sky."



- “Aurangzeb’s death in 1707 marked a turning point in Indian history, paving the way for the Marathas to emerge as the dominant political force in the subcontinent. Despite the long-standing animosity between the Marathas and the Mughals — especially with Aurangzeb executing Sambhaji Maharaj, the father of Shahu I — his tomb was largely left undisturbed.”
- “Historical records suggest that Shahu I, upon his release following Aurangzeb’s death, visited the tomb of the Mughal emperor. Shahu, who was imprisoned by the Mughals at the age of seven and spent 18 years in their courts, had every reason to harbour resentment towards Aurangzeb, particularly after his father’s execution in 1689.”
- “While most Mughal monuments, including Aurangzeb’s tomb, were largely left undisturbed — even thrived — under the Maratha rule, there were occasional incidents of plunder during the Maratha rule. These incidents highlight that while the Marathas generally preserved many Mughal structures, they did not hesitate to plunder certain tombs and royal buildings during times of military conflict. The most well-known of this is the attack on the Red Fort in 1761, just before the Third Battle of Panipat. The Marathas, during one of their expeditions to Delhi, looted the Diwan-i-Khas, where Mughal emperors received courtiers and state guests.”

Do You Know:

- The eldest son of the celebrated Maratha emperor, Chhatrapati Shivaji, Sambhaji Maharaj was the second ruler of the kingdom after his father’s death. In his short rule spanning nine years, Sambhaji gained recognition for his valour and patriotism. He continues to be celebrated, particularly in Maharashtra, as the ruler who chose death over conversion.
- He ruled from 1681 to 1689. His rule was largely shaped by the ongoing wars between the Marathas and the Mughal Empire, Siddi of Janjira, Wadiyars of Mysore, and the Portuguese Empire.

CHHATTISGARH’S NEW SURRENDER POLICY FOR MAOISTS: FREE FOOD, CASH, SKILL & SHELTER

As anti-Maoist operation in Chhattisgarh intensifies, Home Minister Vijay Sharma has announced a new ‘Surrender and Rehabilitation Policy’ for surrendered red rebels – provision of free food, shelter, cash, skills, land and a home.

— “Once that is decided, for three years, shelter and food will be free for three years. They will receive Rs 10,000/month, will undergo skill development and will get a land and home under the Prime Minister housing scheme. They will get extra benefits for bringing a weapon and they will also get the bounty amount they have on their arrest,” he said.

— Under the new rehabilitation policy, the state will sponsor the education of children who have lost parents to “Naxal violence”.

— “Those displaced due to Naxalism will get monetary aid and land,” Sharma said.

— Prime Minister Manmohan Singh in 2004 has called the Maoists violence as the “greatest internal security threat for the country”.

— Between 2018 and 2020, Chhattisgarh has accounted for 45% of all incidents in the country and 70% of security personnel deaths in such incidents.



— According to the data provided by the Ministry of Home Affairs (MHA) in Lok Sabha (2022), Left Wing Extremism (LWE) violence has decreased from 2,258 in 2009 to 509 in 2021.

— Prakash Singh writes: that there are two fundamental flaws in our anti-Naxal strategy. First, in most states, there is a tendency to outsource the operations against Naxals to the central armed police forces. Second, “the development paradigm pursued since independence has always been ‘imposed’ on the tribal communities and has been insensitive to their needs and concerns”

SHAH: OVER 80% OF BODO ACCORD CONDITIONS IMPLEMENTED, REMAINDER IN NEXT TWO YEARS

Union Home Minister Amit Shah on Sunday said the Union and state governments had implemented “82%” of the conditions in the 2020 Bodo Accord and would implement the remainder in the next two years.

- Shah was speaking at the annual conference of the All Bodo Students’ Union (ABSU) in Kokrajhar in Assam’s Bodo Territorial Region (BTR). He also took a jab at the Congress while talking about the implementation of the accord.

- Shah said in the last three years Rs 287 crore had been spent on the rehabilitation of 4,881 members of the NDFB, saying the Centre provided 90% of this amount.

- At the meeting, Shah also announced that “a prominent road in Delhi” would be named after “Bodofa” Upendra Nath Brahma Marg, a former ABSU president who was one of the tallest leaders from the community. Shah also said his bust would be unveiled in Delhi in the first week of April.

Do You Know:

- The 2020 Bodo Accord was the third such accord signed with Bodo groups after the Bodo insurgency aimed at a separate state flared up in the 1980s. The 2020 accord brought about a truce with four factions of the militant National Democratic Front of Bodoland (NDFB). It extended on provisions already in effect through the earlier accords by providing for, among other things, more legislative, administrative, executive, and financial powers to the BTC.

- Bodos are the single largest tribal community in Assam, making up over 5-6 per cent of the state’s population. They have controlled large parts of Assam in the past

- The four districts in Assam — Kokrajhar, Baksa, Udalguri and Chirang — that constitute the Bodo Territorial Area District (BTAD), are home to several ethnic groups.

- The Bodos have had a long history of separatist demands, marked by armed struggle. In 1966-67, the demand for a separate state called Bodoland was raised under the banner of the Plains Tribals Council of Assam (PTCA), a political outfit. In 1987, the All Bodo Students Union (ABSU) renewed the demand. “Divide Assam fifty-fifty”, was a call given by the ABSU’s then leader, Upendra Nath Brahma.

- The unrest was a fallout of the Assam Movement (1979-85), whose culmination — the Assam Accord — addressed the demands of protection and safeguards for the “Assamese people”, leading the Bodos to launch a movement to protect their own identity. In December 2014, separatists killed more than 30 people in Kokrajhar and Sonitpur. In the 2012 Bodo-Muslim riots, hundreds were killed and almost 5 lakh were displaced.



- Bodoland Territorial Council is an autonomous body under the Sixth Schedule of the Constitution. There have been two Bodo Accords earlier, and the second one led to the formation of BTC. The ABSU-led movement from 1987 culminated in a 1993 Bodo Accord, which paved the way for a Bodoland Autonomous Council (BAC), but ABSU withdrew its agreement and renewed its demand for a separate state. In 2003, the second Bodo Accord was signed by the extremist group Bodo Liberation Tiger Force (BLTF), the Centre and the state. This led to the BTC.

EXPRESS VIEW: INDIAN UNIVERSITIES CLIMB QS RANKINGS — BUT CAN THEY GO GLOBAL?

The performance of Indian institutes in the QS University World Ranking System, released last week, shows that their initiatives to upgrade the research ecosystem are yielding results. Nine institutes in the country figure in the top 50 and 79 Indian universities have made it to the list, up from 69 last year. Indian universities are particularly well represented in engineering (24 institutes), social sciences (20 institutes) and natural sciences (19 institutes). It's heartening that at a time when several reports and surveys have called out the skill deficit of Indian graduates, the QS survey speaks of the strides taken by the country's top universities to improve their standing among employers. However, QS 2025 also shows where the country lags in its endeavour to become a top knowledge economy destination. It underlines that India's elite universities need to improve student learning experiences and enhance their global presence.

The resources available to students for teaching, supervision and curriculum development play a crucial role in their learning experiences. The top runners in the QS ranking system have a near perfect score on that metric. The best Indian universities, in contrast, score between 10 and 20. Attracting an adequate number of qualified faculty and providing them with favourable working conditions has been a longstanding problem of the country's higher education milieu. In 2023, a CAG audit found that though the IITs have been recruiting faculty consistently, the pace of recruitment did not match student enrolment. This historical weakness has, however, never been scientifically quantified. In 2009, a task force set up by the erstwhile Ministry of Human Resource Development, called for "standing mechanism to monitor the size and quality of faculty resources and for data on faculty members to be made available on the website of every academic institution". This recommendation has, at best, been partially implemented. The government does collect faculty-related data for its Annual Survey of Higher Education. However, this is a voluntary process for institutions and the numbers are not verified by an independent agency.

The QS survey suggests that Indian universities could benefit from global collaborations which enable the "country's scholars to access a wider range of academic debates and discoveries". The National Education Policy too rightly emphasises the role of cross-border collaborations. The government has also invited universities outside the country to set up campuses in India. And, in 2023, IIT-Madras set up a wing in Zanzibar, Tanzania. Internationalisation is, however, a work in progress. The need of the hour is to liberalise the student exchange rules between Indian and foreign universities as well as build linkages with industry. Indian education administrators could perhaps do well to take cues from the 17-year-old tie-up between IIT-Bombay, among the consistent performers from the country in global ratings, and Monash University in Australia. If there's one message from the latest QS rankings it's this — top Indian institutes require more of such nurturing. That could provide them with the experience required to play a critical role in the education milieu — handhold the smaller universities that cater to the bulk of the needs of the country's aspirational classes.



IS THE APAAR ID FOR STUDENTS MANDATORY?

The story so far:

Activists and parents are worried about the rapid push by schools to generate an APAAR ID. APAAR is part of the National Education Policy (NEP), 2020's record-keeping reforms, and while it is voluntary, States and school authorities have pushed students to enrol in it.

What is the APAAR ID?

APAAR stands for Automated Permanent Academic Account Registry. The registry enables what the government describes as the 'One Nation, One Student ID', in order to "accumulate and store [students'] academic accomplishments, facilitating seamless transitions between institutions for the pursuit of further education". The APAAR ID is linked to Aadhaar and is stored in the DigiLocker. The registry provides students with standardised data on their marksheets and institutional affiliation. The system is touted as a way for different educational institutes to rapidly process and verify any given student's academic transcripts. APAAR is generated through the Unified District Information System For Education Plus (UDISE+) portal, which contains regional academic statistics and data on schools, teachers and students.

The ID is a key aspect of NEP 2020's mandate to overhaul education data collection for policymaking and analysis. The Education Ministry has been pushing schools affiliated with the Central Board of Secondary Education (CBSE) to get "100% saturation" with respect to students registering for an APAAR ID.

Is APAAR mandatory?

APAAR is not mandatory, according to a document posted on the ID's official site. However, circulars by the CBSE, and FAQ pages that have been published by the government, do not make this clear. The government has instead described the benefits of APAAR to students, such as permanently recording data on "transfer from one school to the other, entrance examination, admission, job application, skilling, upskilling," and so on. While there is no law mandating its use, the CBSE and States like Uttar Pradesh have laid out expectations to schools, under their umbrella, that the ID should be issued to all students. Parents often do not receive any information which clearly spells out that the programme is voluntary. The Union government re-confirmed the optional nature of APAAR in response to a Parliament query in December 2024.

What about data security?

There is still a lack of clarity over the genesis of the APAAR programme. When the Internet Freedom Foundation (IFF) attempted to file a Right to Information application on its policy documents, the Union government transferred the advocacy's application over 30 times, with no clear answer for months. "The datasets slated to be collected through APAAR enrolment are not limited to just educational certificates and grades, but spread far and wide," the IFF wrote in 2023. Besides, the large-scale collection of data of minors without a law to back it up, the IFF argues, is unconstitutional. Moreover, teachers have questioned the need for APAAR, arguing that the data that APAAR collects is already collated by teachers for the UDISE+, thus duplicating a significant amount of administrative work in schools.

"Additionally, Section 9(3) of the Digital Personal Data Protection Act, 2023 specifically prohibits "tracking or behavioural monitoring of children or targeted advertising directed at children" by



entities,” the IFF points out. “Having open Application Programming Interfaces (APIs) and channels of data sharing without any robust safeguards, can expose children’s data to third parties who may use it for such purposes. Before it is rolled out, any such interfaces must be secured and legal safeguards put in place. There is an added responsibility on the APAAR framework to ensure cyber security, as the data being processed pertains to children.. ”.

How is an APAAR ID generated?

Teachers and schools are taking the lead in guiding parents to generate an APAAR ID for students. Schools verify a student’s “demographic details,” that is, their name and date of birth. Parents are then required to fill a consent form, and after another step of authentication by the school, the APAAR ID is generated. Some parents have flagged issues regarding the mismatch of names in school records and identity documents. “The user must correct the inaccurate data and resubmit their request to generate the APAAR ID”, an official document states.

Is there a way to opt out?

Parents have the option of writing to schools and opting out of generating the APAAR ID for children in their care. The Software Freedom Law Centre (SFLC) has provided a template on its website which parents, wishing to opt out of the scheme, can edit and send to their schools.

However, recent developments are increasing pressure on parents and school authorities at the local level to ensure APAAR generation. For instance, Uttar Pradesh has warned of “mismatch” between APAAR generation and school enrolment data, in spite of the voluntary nature of the programme, and threatened to de-recognise some madarassas that have not started the process. A digital rights advocate said that so far, parents have had success in persuading schools to opt out by providing relevant paperwork to show the voluntary nature of APAAR.

IN BENGAL, A NOTE OF HOPE

Long before friendships became a click and a swipe away — easily gained, superficially experienced and just as easily forsaken — there was once the comfort of letters in which one poured one’s heart out to a trusted confidante. The mailman was the conduit and when the response arrived, it brought with it the promise of a safe space. Those days of letter-writing might be in the past but the mental-health crisis in India, especially among the young, shows that the need for safe spaces has only grown stronger over time. For many young people, hidden under the weight of everyday life, lies a world of emotional turmoil that they are too young, too scared, or too ashamed to articulate. A school in Jalpaiguri, West Bengal, has taken a quiet step in addressing this crisis. It has set up the mon peon-er bag — a wooden letterbox that is fast becoming a repository of secrets at the government-sponsored Fanindra Deb Institution, where children from pre-primary to Class IV, mostly aged between five and 10 years, share their hopes, confessions, and deepest insecurities, often anonymously.

Implemented as part of a mental-health support programme, in the month since its inauguration, the initiative has seen nearly a hundred notes in which students have spoken of all that they hold within — hopes for more games classes, distress over disputes between parents, longing for a parent who works in a different state or hurt against one who chooses work over family. The school plans to reach out to families, particularly of students grappling with parental conflict, to counsel them into negotiating domestic turbulence better. But more than anything else, what the



simple act has done is to empower pupils to speak up — knowing that their voices won't go unheeded.

In a world that often rushes past the struggles of its youngest, the mon peon-er bag is a reminder that even the smallest gesture can spark profound change. In the vulnerability shared and the hope received seeds of resilience and healing are sown, one note at a time.

INDIA TAKES 24TH SPOT IN FREE SPEECH SURVEY

A new global survey by the Future of Free Speech, an independent U.S.-based think tank, has ranked India 24th out of the 33 countries surveyed on the question of support for free speech. Its report, titled 'Who in the world supports free speech?' states that "while abstract support for free speech remains strong, commitment to protecting controversial speech is eroding in many parts of the world."

The survey, conducted in October 2024, also revealed that "more countries have seen declines rather than improvements in free speech support since 2021, with some of the biggest drops occurring in democratic nations like the United States, Israel, and Japan".

Scandinavia dominated the top rankings, with Norway and Denmark finishing at the apex of the Future of the Free Speech Index with scores of 87.9 and 87.0.

Disconnect flagged

Indonesia (56.8), Malaysia (55.4), and Pakistan (57.0) showed the biggest improvements, though they remained at the lower end of the ranking. India, with a score of 62.6, was placed 24th, between South Africa (66.9) and Lebanon (61.8). At the same time, some authoritarian-leaning nations — such as Hungary (85.5) and Venezuela (81.8) — scored high, "suggesting a disconnect between government restrictions and public attitudes".

As regards its findings concerning India, the survey found that while a majority of Indians consider it very important to speak freely without government censorship, support for criticism of government policies was below the global average.

For instance, 37% of Indian respondents supported the statement that "governments should be able to prevent people" from criticising government policies — the highest percentage among all the countries surveyed.

Public sentiment

In contrast, 5% of the respondents supported this statement in the U.K., while only 3% endorsed this sentiment in Denmark.

In general, nations that are more supportive of free speech tend to enjoy more freedom of expression in practice and vice versa. But India was an exception to this pattern. "The most substantial disconnects from the general pattern are represented by India, Hungary, and Venezuela where the actual protection of free speech is very low compared to the popular support. These are all cases of democratic backsliding in countries that previously demonstrated high levels of respect for political liberties, including freedom of expression," the report stated.

When asked whether their ability to speak freely about political matters has improved or worsened over the past year, "Indians and South Africans believe that they have undergone the



most significant progress, although observers and rankings tend to agree that the situation in India has become worse, if anything,” the report noted.

X CORP. CHALLENGES CONTENT BLOCKING ORDERS, OPPOSES CENTRE’S ‘CENSORSHIP PORTAL’

Elon Musk-owned X (formerly Twitter) has challenged the government’s use of Section 79(3)(b) of the Information Technology Act, 2000 (IT Act) to moderate and order the removal of content on social media. The company has argued that the government’s “misuse” of the provision bypasses safeguards available under other provisions of the IT Act — namely Section 69A — that are specifically meant for the purpose of content moderation.

— In *Shreya Singhal v Union of India* (2015), the Supreme Court struck down Section 66A of the IT Act which criminally punished, among other things, sending false information “for the purpose of causing annoyance or inconvenience”.

— The SC in *Shreya Singhal* also clarified the application of another provision — Section 79 of the IT Act. The provision is a “safe harbour” measure that exempts an “intermediary” (such as X) from liability for information published on the platform by a “third party”, that is, users of the platform.

— But Section 79(3)(b) states that the intermediary could be held liable if it does not immediately remove such unlawful information “upon receiving actual knowledge, or on being notified by the appropriate Government or its agency”

— The apex court limited the scope of this provision, ruling that the requirement under Section 79(3)(b) will only kick in once a court order has been passed to that effect, or the government issues a notification stating that the content in question is related to grounds provided in Article 19(2).

— But in October 2023, the Ministry of Electronics and Information Technology (MeitY) issued a directive to all ministries, state governments, and the police saying that information blocking orders could be issued under Section 79(3)(b). A year later in October 2024, MeitY launched a portal called “Sahyog” where the aforementioned authorities could issue and upload blocking orders.

— X’s challenge before the Karnataka High Court argues that MeitY’s orders are an attempt to “bypass the multiple procedural safeguards” provided under Section 69A. The petition relies upon the SC’s ruling in *Shreya Singhal*, and says that content can only be censored through the process given under Section 69A or through a court order.

Do You Know:

— X’s petition comes at a time when its AI chatbot Grok 3 has been courting controversy for its use of Hindi slang, and responses that are critical of the government.

— The Grok controversy introduces a new angle when it comes to “safe harbour” provisions like Section 79... Courts will have to determine if information published by a “third party” includes AI generated responses.

— Grok has the distinguishing capability of searching and using data on X (such as public posts by users) to provide “up-to-date information and insights.” The AI chatbot has further been



integrated on X in such a way that users only have to tag Grok in their public timelines to receive a response.

WHY DOCKING-UNDOCKING CAPABILITY IS CRUCIAL FOR INDIA'S SPACE AMBITIONS

Nearly two months after ISRO successfully docked two satellites in space, it carried out an undocking procedure on Thursday. This makes India the fourth country — after the US, Russia, and China — to boast docking-undocking capabilities.

- This capability is essential for missions with heavy spacecraft that cannot be launched from Earth in one go. Weight is among the biggest limiting factors in what we can or cannot send to space. This is why things are often sent to space in parts, to be assembled while in space. This is how the ISS was built.
- The docking-undocking process is also essential to carry astronauts and supplies to a space station.
- With India setting its sights on extremely ambitious missions in the near future, including setting up its own space station by 2035 and sending a human to the Moon by 2040, the capability to rendezvous, dock, and undock will be critical.
- Chandrayaan-4, which is designed to bring back lunar soil and rock samples, will utilise this capability.

Do You Know:

- As the name suggests, space docking is essentially a process by which two fast-moving spacecraft are put into the same orbit, progressively brought closer, and finally joined together. It is an extremely complicated process.
- To demonstrate this capability, ISRO launched the experimental Spadex mission on December 30, 2024. This comprised launching two 220-kg satellites — SDX01 (Chaser) and SDX02 (Target) — in a 470 km circular orbit, with a small relative velocity between the two. From an initial distance of 20 km in space, these two were progressively brought together and then joined using their extended locking mechanism.
- For the mission, ISRO developed its own docking system on the lines of the one used at the International Space Station. Like the ISS system, ISRO's is androgynous — meaning the systems on both the Chaser and Target satellites are identical. But it has only two motors, compared to the 24 used in the International Docking System Standard.

WHAT ARE THE DIFFERENT RISKS AND REWARDS OF USING UAVS?

The story so far:

The sight of two Chinese Unmanned Aerial Vehicles (UAVs) over waters near Okinawa recently had Japan scrambling to pursue them. Yet, the level of alarm was considerably lower than what it would have been if the People's Liberation Army Air Force's piloted aircraft had been sighted near Japanese airspace. Arguably, in most cases, UAVs are seen as less of a threat than a fighter jet in the same context.



Why are UAVs seen as less of a threat?

Many features factor into this perception. UAVs are, by and large, less dangerous, since even those UAVs that are capable of carrying weapon payloads are still less capable than fighter jets; a large proportion of UAVs are not armed and serve surveillance and reconnaissance purposes. Additionally, the lack of direct human presence makes them seem like less of an instrument of state power. By virtue of being unmanned, sending a UAV for a reconnaissance mission seems like a low-hanging fruit, where the mission may be just as effective without endangering human life, or risking an expensive inhabited aircraft. Even if UAVs are downed by enemy forces, they seem less of a burden financially.

Are there recent examples of this?

Instances of drones being shot down and met with a relatively restrained response are examples of this. For instance, in 2019 an American surveillance drone was shot down by Iran over the Strait of Hormuz using an Iranian surface-to-air missile. The Iranians called it an act of self-defence as the drone, they said, was within their airspace, while the U.S. claimed it was flying over international waters. Tensions were already high then, and U.S. President Trump ordered a strike, but it was soon aborted. Although U.S. forces maintained readiness in the region, no overt military retaliation occurred. Similarly, when Russia brought down an American MQ-9 Reaper UAV in 2023 there was no major retaliation.

While this perceived lower level of threat can prevent actions from resulting in conventional warfare, it can also indirectly encourage risk-taking behaviours. While countries would not typically be willing to infiltrate another country's airspace or fly close to foreign territories in a fighter jet, the costs of losing an unmanned aircraft are lower and therefore countries are more willing to utilise them for such missions. Given that UAVs are also met with less drastic forms of retaliation, countries can see them as an easy way to perform actions that they would not otherwise.

What are the repercussions for India?

The challenge for India is to figure out how to effectively deal with UAVs, especially in relation to its neighbouring countries. In the case of Pakistan, smaller propeller-powered UAVs are often used to transport arms and drugs across the border, with the Pakistani government not taking accountability. India will need to figure out how to deal with such incursions without utilising expensive missiles to bring them down like it did in 2019. Air-to-air missiles like the one India used via a Su-30 in 2019 are far more expensive than the dual-use UAVs they are used to bring down. Pakistan has not taken any major retaliatory actions when India has shot down UAVs. Similarly, Bangladesh recently deployed Turkish Bayraktar TB-2 UAVs near the Indian border for surveillance. In the case of larger fixed-wing UAVs like the Bayraktar TB-2, which is akin to most inhabited military aircraft in terms of size and endurance, in the unlikely event that it ventures into Indian airspace, given the lower associated level of threat, India will have to figure out how to address the issue without risking further escalation.

As UAVs become integrated with military operations, Indian military strategy will have to evolve accordingly.



TWO MEGA DEALS WITH FRANCE WAIT FOR CABINET PANEL NOD

Two mega defence deals with France — for 26 Rafale-M fighter jets and three more Scorpene-class conventional submarines — worth close to \$11 billion are now awaiting final approval by the Cabinet Committee on Security (CCS) before their anticipated conclusion very soon.

The Indian Navy will get to see up close the performance of the Rafale-M jets on the French aircraft carrier Charles de Gaulle as the carrier strike group currently in the Indian Ocean is scheduled to visit Goa next week for the bilateral Varuna exercise.

“All formalities have been completed and the case has been put up to the CCS for a couple of weeks now,” an official confirmed on the deal for 26 Rafale-M jets. “Negotiations were done weeks back,” the official said.

The Navy has been very keen that both deals be inked in this financial year ending March 31 so they are included in this year’s Budget.

The Rafale-M deal is expected to be concluded in April when the French Defence Minister is expected to visit India. As reported by The Hindu earlier, deliveries of the Rafale-M for the Indian Navy would begin in four years once the contract is signed.

Officials said that given that it is a government-to-government deal, funds earmarked in this fiscal budget can be rolled over to the next.

Follow-up agreement

Sources stated that the Scorpene deal is also complete in all respects. It is a follow-up to the earlier deal for six Scorpene submarines procured under Project-75 between Naval Group of France and Mazagon Dock Shipbuilders Ltd. (MDL).

If the deal is concluded next month, the Indian Navy would begin receiving from 2029 the Rafale-M jets and MQ-9B, an unmanned aerial vehicle with high altitude and long endurance features, contracted from the U.S.

On July 13, 2023 as Prime Minister Narendra Modi was en route to Paris, the Defence Acquisition Council chaired by Defence Minister Rajnath Singh accorded Acceptance of Necessity for the procurement of 26 Rafale-M fighters and three additional Scorpene-class diesel-electric submarines.

The 26 Rafale deal includes 22 single-seater Rafale-M and four twin-seater Rafale trainers (which are not carrier compatible). The 26 jets are meant to fill the gap in numbers till the indigenous Twin Engine Deck-Based Fighter, which is under development, is inducted into service. The Navy currently operates two aircraft carriers — INS Vikramaditya procured from Russia and the indigenously built INS Vikrant that was commissioned in September 2022.

AN IDEA TO KEEP WATER FLOWING IN SUB-ZERO TEMPERATURES

In Kargil, the second coldest inhabited place in the world where temperatures plummet to sub-zero during winter, access to regular water was a challenge until a decade ago, when a unique idea was developed into a permanent solution.



- Through the Jal Jeevan Mission, the local administration has slowly created underground reservoirs that connect to a network of underground, insulated pipes to provide running water to the households in Drass.
- The difficulty of water freezing in overground pipes has been countered by burying the water supply network at least five feet deep.
- “In the harsh winter, anything above ground will completely freeze because of how low the temperatures can get. However, if we dig beyond the top four feet, water remains at normal temperature and does not freeze,” the councilor from Bhimbhat in Kargil told The Indian Express.
- While burying water pipes is the norm in the cold desert that is Ladakh, “earlier, there would be one tap with lots of insulation carrying water to the surface and about 30 to 40 households would share that to carry water home,” Abdul Wahid said.
- Over the last three years, the extension of this system to individual households has resolved a significant issue for residents of Kargil and Leh. Sourced from local springs, the water is collected in large reservoirs built at a height in different villages. Where natural sources aren’t available, borewells have been dug to provide water to villages in the area.

Do You Know:

- Kargil District Magistrate Srikant Balasaheb Suse has been recognised under the category of Resource Utilisation from Central and State Schemes in the Excellence in Governance Awards 2024 organised by The Indian Express.
- He said, “My project is part of the Jal Jeevan Mission. We have lots of water challenges in Ladakh because it gets as cold as -30 degrees Celsius. Everyone was sceptical of the scheme, and we didn’t get support at first because there was little technical know-how about how to fix a problem in a region like this. We researched and brainstormed a lot before implementing three to four technologies.”

US FIRM BRINGS WEIGHT-LOSS DRUG TO INDIA, 2.5-MG VIAL TO COST `3,500

The new class of weight-loss medicines that has taken the world by a storm will now become available in India, with the pharmaceutical giant Eli Lilly on Thursday announcing the launch of tirzepatide to be marketed as Mounjaro. The medicine will be available in a single-dose vial, meant to be taken as a shot under the skin every week.

- The 2.5 mg vial is priced at Rs 3,500 (MRP) and the 5 mg vial is priced at Rs 4,375 (MRP). This India-specific pricing is part of Eli Lilly’s effort to expand access.
- The drug — along with Novo Nordisk’s semaglutide marketed as Wegovy — has been much anticipated in India after its significant weight-loss effect was witnessed by many around the world.
- Tirzepatide belongs to a new class of diabetes medicines that were approved for the treatment of chronic obesity after they were found to be almost as effective as bariatric surgery for weight-loss. Called incretin mimetics, these drugs mimic the action of certain gut hormones to improve secretion of insulin, inhibit secretion of glucagon that stimulates glucose production in the liver, and also reduce appetite by slowing down digestion.



- Tirzepatide acts on two targets — GLP-1 (glucagon-like peptide-1) hormone receptor and GIP (glucose-dependent insulintropic polypeptide).

The medicine can help people lose just over 20% of their body weight on average, with nearly one in three persons dropping a quarter of their body weight. The drug is not a magic bullet, however. It has to be taken along-side a reduced-calorie diet and increased physical activity.

- The drug is meant to be prescribed to those who are obese with a BMI (body mass index) of over 30 or those who are overweight with a BMI between 25 and 29 with other weight-related co-morbid conditions such as diabetes and heart disease among others.
- The drug should not be prescribed to people who have a family history of a particular type of thyroid cancer called medullary thyroid carcinoma (MTC) or a rare condition called Multiple Endocrine Neoplasia syndrome type 2 (MEN 2). It should be avoided in people who may have an allergic reaction to the medicine or its components.
- The subject expert committee on endocrinology and metabolism, under the apex drug regulator Central Drugs Standard Control Organisation (CDSCO), recommended that permission be granted to Eli Lilly for importing and marketing the medicine in a single dose pre-filled pen and in a single-dose vial in June last year. The company was also given permission to import and market multi-dose pen by December.
- The expert committee recommended a phase IV trial — or post-marketing surveillance — be carried out by the company, which helps in understanding long term safety of the drug, its effects on a diverse population, and rare side-effects, if any.

Do You Know:

- Globally, one in eight people were living with obesity in 2022. There were 890 million adults and 160 million adolescents living with obesity in 2022. The prevalence of obesity has doubled in adults since 1990 and quadrupled in adolescents, according to the WHO.
- In India, there were 44 million women and 26 million men living with obesity in 2022.
- In the three decades between 1990 to 2022, the prevalence of obesity in women increased 8.6 percentage points and prevalence in men increased 4.9 percentage points.
- There has also been a significant increase in childhood obesity in the three decades. While 0.2 million boys and 0.2 million girls were obese in 1990, 7.3 million boys and 5.2 million girls were obese in 2022.
- WHO scientists say that global costs associated with obesity are likely to reach \$3 trillion by 2030. In countries with 30 per cent prevalence of obesity, it could absorb up to 18 per cent of the national health expenditure.
- Scientists also argue that obesity adds to mortality — there were five million obesity-related deaths from non-communicable diseases in 2019. This accounted for 12 per cent of all deaths from non-communicable diseases worldwide.
- Novo Nordisk's Ozempic, originally approved in 2017 for type 2 diabetes, gained immense popularity as doctors prescribed it off-label for obesity, sparking a social media frenzy and supply shortages.



A JAB IN TIME

With recent reports indicating a rise in the seasonal influenza cases in the Delhi-NCR area, it is once again time to issue a cautionary note and make a renewed effort to push adult vaccination in the country. The predominant strains involved this season are Influenza A and Influenza B, many treating physicians and pulmonologists have reported. Influenza, with the moniker flu, is a contagious respiratory illness caused by viruses. While it is routinely conflated with the common cold, since the symptoms present similarly — sudden cough and sore throat, with high fever, accompanied by muscle pain, body aches, headaches, fatigue and stuffy nose — it is not quite the same. Both are caused by different viruses and can have varying symptoms and severity. The flu causes mild to serious illness, requiring hospitalisation sometimes, and in a few cases, mostly coinciding with a delay in hospitalisation, can even lead to death. In India, there are two peaks of seasonal influenza, one from January to March and the other in the latter part of the southwest monsoon, in August-October. India has developed a near real time surveillance of cases of Influenza like Illness (ILI) and Severe Acute Respiratory Infections (SARI) presenting themselves in health facilities. This programme was further strengthened and made more robust during and after the COVID-19 pandemic. There is also real time surveillance through the country-wide network of diagnostic laboratories. Epidemiologists say influenza surveillance is a key tool to keep tabs on circulating strains, and define seasonality, besides, playing an important role in syncing vaccination with relevant circulating strains. With all this information in place, it is highly unlikely that health managers will miss any seasonal uptick of cases.

However, the task at hand for governments is a little more complex — it is about being prepared to handle the outbreak by anticipating it and inculcating a sense of preservation, particularly among the high-risk groups ranging on the extremes of the age spectrum. Attention should be paid to children, senior citizens and people with chronic respiratory conditions. Key among the interventions recommended is increasing awareness on vaccination for influenza; in fact, people of all ages will benefit from a periodic shot of the updated flu vaccine. While vaccination for children is, by and large, acceptable, and an area of focus for all health managers, adult immunisation gets the short shrift. At the moment, it is left to the whims and resources of State governments to offer adult vaccinations. Targeted awareness campaigns must be clear, urgent in tone, and make an impact on the high-risk groups particularly, because, very simply, vaccines save lives.

ENVIRONMENTAL MAPPING REVEALS MELIOIDOSIS PEAK DURING MONSOON

Globally, research on climate/environmentally driven infectious diseases has been largely biased towards vector-borne diseases like malaria, dengue, etc. Melioidosis is a bacterial infectious disease caused by *Burkholderia pseudomallei*, and is primarily acquired by inoculation, inhalation and/or ingestion of soil- and water-dwelling environmental saprophytes. The disease is strongly influenced by environmental factors such as rainfall, temperature, and humidity. In 2016, The Lancet, based on a prediction modelling study, reported that about 1,65,000 people contract melioidosis annually worldwide, of which South Asia, including India, contributes to 44% of the global burden of melioidosis. The report attracted enormous scrutiny and attention by the medical fraternity, and microbiologists and clinicians in a few selected centres across India took cognisance of the situation to further unravel the mysterious disease.

There are many reasons why the melioidosis-causing bacteria, described over a hundred years ago, has continued to baffle the medical fraternity. First, the bacteria have a unique ability to cause



a plethora of clinical manifestations ranging from a trivial skin infection to unresolving pneumonia and fulminant sepsis. With fatality as high as 50% in septicaemic cases, melioidosis is a medical conundrum. Second, the *B. pseudomallei* bacteria requires prolonged incubation conditions, and can escape detection in inexperienced microbiology laboratories, as chances of misidentification with common bacteria like *Pseudomonas aeruginosa* are quite common. Third, the treatment of melioidosis is quite different from other infectious diseases as it requires an initial intravenous therapy followed by a prolonged eradication phase of 12-20 weeks. This puts a significant emphasis on correct diagnosis, as inadequate treatment runs a risk of recurrence.

In India, melioidosis research has mainly focused on understanding the disease from the host perspective, like presence of comorbidities like diabetes, chronic renal diseases, etc and occupational factors like farming and behavioural factors like alcoholism, which increases the likelihood of diseases. In Odisha, melioidosis cases are being reported at AIIMS Bhubaneswar, with cases increasing over the years.

CANCER CARE, CLOSER HOME

According to the Indian Council of Medical Research, India had more than 14 lakh cancer patients in 2023. Experts reckon that this figure is very likely an underestimate — the actual disease burden could be 1.5 to 3 times more than the reported cases. Though India has a screening programme for cervical, oral and breast cancers — these constitute more than a third of the country's cancer burden — detection rates are among the lowest in the world. Late detection of malignancy, and therefore late initiation into treatment, is amongst the biggest public health challenges in the country. The problem is particularly serious in rural areas. That's why the government's initiative to equip all district hospitals with a cancer care centre is much-needed. According to a blueprint drawn up by the Union health ministry, every such facility will have an or a medical officer, along with two nurses, a pharmacist and a multi-purpose worker.

The number of cancer specialists required by the country varies according to surveys. However, even by conservative estimates, India is short of at least 2,000 oncologists. Some district centres, especially in the Northeast and Kerala, do offer specialised cancer care. However, at least 50 per cent of oncologists operate from urban centres. Drafting specialists could, therefore, be a challenge for the new programme. For starters, the government could upscale the use of mobile clinics in rural areas. A large section of patients, many of them women, do not come forward for screening. The new initiative could link up with hospitals which send teams to people's doorsteps and work sites for diagnostic tests. Policymakers should also find ways to encourage the use of digital tools, such as telemedicine, at the new rural cancer units and link them through the National Cancer Grid. This will allow the exchange of expertise between rural and urban facilities.

Cancer treatment can be emotionally taxing and patients in rural areas face additional mental health challenges due to limited support groups. That's why several patients discontinue therapy. The provision of counselling services at the new centres could help ensure continuity in treatment. This could be complemented with telehealth counselling services to provide mental health support to rural patients. The government would do well to use advancements in technology to mitigate deficits in resources.



INDIA'S CAR T-CELL THERAPY FOR CANCER PATIENTS SHOWS 73% RESPONSE RATE: LANCET

The clinical trial results of India's first CAR T-cell therapy, published in The Lancet, show that it worked for nearly 73 per cent of patients. These results come from the Phase I and II trials of the therapy, where researchers assess its safety and effectiveness against a given condition.

- This is the first clinical trial of a CAR T-cell therapy from India to be published in an international journal. "This is really a world class innovation done within the country. The treatment has been found to be comparable to others approved globally and the cost is 1/20th of those therapies. This will improve access and affordability of such high-end cancer treatments," the Lancet commentary said.
- CAR T-cell therapy, or chimeric antigen receptor T-cell therapy, trains the body's own immune cells to identify and destroy cancer cells. This treatment is designed for specific types of blood cancer and is given to patients whose cancer has either relapsed or not responded to first-line treatment.
- Based on unpublished, yet-to-be peer-reviewed results, India's drug regulator had granted approval for this therapy in 2023. It is now available at several hospitals across India, including Apollo, Fortis, Amrita and Max, among others.
- Given that the treatment is novel and intended for cancer patients with no other options, the regulator allowed the company — a start-up incubated in IIT Bombay called ImmunoAct — to forgo a large Phase III clinical trial to demonstrate its efficacy in a broader population. However, the company must follow up with all patients who receive the therapy for 15 years.
- While the response rate was found to be similar to other therapies approved across the world, there was high incidence of haemophagocytic lymphohistiocytosis — a serious but known complication of CAR T therapies where the immune cells get uncontrollably activated leading to hyper inflammation and organ damage.
- For any CAR T-cell therapy, a patient's immune T-cells are collected by filtering their blood. These cells are then engineered in a lab to add receptors that can bind with cancer cells. These cells are then multiplied and infused in the patient. Usually, the cancer cells are adept at evading the unmodified T cells. The treatment developed in India is meant for patients with two types of blood cancers that affect the B cells — acute lymphoblastic leukemia and large B cell lymphomas.
- Access to cutting-edge cancer treatment like CAR T-cell therapy remains restricted to a handful of countries owing to the technological challenges as well as the cost associated with the treatment.

Do You Know:

- T-cells are primarily used in CAR-T cell therapy because of their pivotal role in the immune system's response to pathogens and malignancies. These cells can be genetically engineered to express chimeric antigen receptors (CARs), which are specifically designed to recognise and bind to antigens on the surface of cancer cells. Once bound, these modified T-cells can efficiently kill cancer cells.



- Other cells like B cells or natural killer cells also play roles in immunity but don't have the same adaptability and memory capabilities as T cells, making them less effective for the persistent and targeted action required in CAR-T cell therapy.

HEAT PLAN

Summer has arrived early in several parts of India. In the last week of February, heatwaves were officially reported in Goa and Maharashtra. States such as Odisha, Telangana, and Maharashtra have already recorded temperatures exceeding 40°C. Throughout most of February, 31 States and Union Territories experienced night temperatures at least 1°C above normal, with 22 States and Union Territories reporting night temperatures that were 3°C to 5°C above normal. Given that February is classified as 'winter' by the India Meteorological Department, these are signposts that point toward new climate normals. Scientists have long warned that rising global temperatures — both on land and sea — will result in more intense and frequent heatwaves. This underscores the need for countries and States to prepare for heat events just as they do for earthquakes or floods. However, a recent study by the Sustainable Futures Collaborative, which examined heat-related preparedness in nine Indian cities, found that none had long-term plans in place. Most responses are limited to short-term emergency measures such as providing drinking water, adjusting work hours, and boosting hospital capacity during heatwaves. Crucial long-term interventions such as ensuring access to household or occupational cooling for vulnerable populations, insuring workers against lost income on extremely hot days, improving fire management, and upgrading electricity grids for reliability are missing. Few cities have even begun planning for expanded local weather monitoring, mapping urban heat islands, or training those responsible for implementing heat plans. Other strategies, which include increasing green cover, creating open spaces to reduce heat, and deploying rooftop solar for active cooling, are often carried out without targeting the populations that are most at risk.

While global efforts to combat climate change largely focus on cutting greenhouse gas emissions, the limited progress on that front is shifting attention to adaptation — particularly in managing responses to heat. Affordable cooling devices are frequently recommended, but they raise concerns about increased use of ozone-depleting refrigerants. Experts now advocate having sustainable buildings, green infrastructure, and passive cooling solutions, although these too can impact land prices and urban planning. India must develop a comprehensive national heat strategy and embed it within its National Adaptation Plan ahead of the 30th UN Climate Change Conference (COP30) in Brazil in November.

LIVELIHOODS AND ECOLOGY: BEHIND KERALA PROTESTS OVER OFFSHORE MINING PLAN

Kerala has been witnessing protests over proposed mining off its coast. Last week, MPs and legislators staged a protest in Delhi against the move. Earlier this month, the state Assembly unanimously passed a resolution urging the Centre to drop the offshore mining plan.

- The Offshore Areas Mineral (Development and Regulation) Act, 2002, (OAMDR Act), which deals with the development of mineral resources in the country's maritime zones, was amended in 2023.
- In the past, offshore excavation was under the aegis of central government bodies such as GSI, Indian Bureau of Mining, Atomic Minerals Directorate, etc. But this amendment opened up offshore mining to the private sector. The amended Act unveiled a competitive auction process to



encourage private sector participation in the exploration of offshore resources such as polymetallic nodules, lime-mud, and construction sand.

- The Centre launched the country's first tranche of e-auction of 13 offshore blocks in November last year. Of the 13 blocks, three are off the Kerala coast, three off Gujarat, and 7 in the Andaman and Nicobar Islands. The proposed lease is for 50 years.
- A study conducted by the Geological Survey of India (GSI) along the Kerala coast has found that the state's offshore has a huge deposit of construction-grade sand, around 745 million tonnes. At present, mining is under consideration at three blocks off the Kollam coast in southern Kerala. The study has found that these blocks have a deposit of 300 million tonnes of sand. The depth of the sea in that coast is from 48 meters to 62 meters.

Do You Know:

- As per the OMDR Act, 'offshore area' means the territorial waters, continental shelf, exclusive economic zone and other maritime zones of India. Section two of the Act arms the Centre with the right to control mines and minerals in offshore areas. At the same time, fishing and related developmental activities up to 12 nautical miles in the sea is a State subject, as per the seventh schedule of the Constitution. The Union mining ministry has told the state that the three blocks off the Kollam coast are beyond 12 nautical miles, and thus are not under the Kerala government.
- Kerala wants the Centre to drop the mining plan as it will lead to irreparable damage to the fisheries sector, the livelihood for around 11 lakh fishermen spread across 222 fishing villages.
- On March 16, Union Minister for Coal and Mines G Kishan Reddy told the Rajya Sabha that the offshore mining blocks have been carved after excluding 130 marine protected areas across the coastal states. He said 106 coastal sites have been identified as Important Coastal and Marine Biodiversity Areas (ICMBAs) to take care of marine conservation.
- The Centre also said the Offshore Areas Mineral Trust was formed with coastal states as members, and the funds accruing to the Trust could be used for mitigation of adverse ecological impacts and to help the affected people.

3 YRS, 100 TIGERS KILLED & COUNTING: NEW-AGE POACHING MAFIA TAPS TECH, DIGITAL PAYMENTS, HAWALA NETWORKS

Investigators from five states, four Central agencies, and the Interpol; three nationwide alerts; two critical meetings of chief wildlife wardens; over a dozen arrests in five states this year alone; and, a syndicate spread across the country's tiger map.

- If the usual suspects in poaching are subsistence hunters, touts scouting forest settlements to fix deals and impoverished "carriers" in small towns sneaking skin and bones in polythene sacks on trains and buses, think again.
- A poaching network marked by an unusual coalition of groups from tribal communities in central India, using digital payments with "hawala funds" and separate supply lines to Nepal and Myanmar, has taken out "100 to any number" of tigers since 2022 from various parts of India, an investigation by The Indian Express has found.
- This newspaper tracked arrest records and court documents, and interviewed forest officials, investigators and former poachers who became informers, to find that this network is leaner and

4TH FLOOR SHATABDI TOWER, SAKCHI, JAMSHEDPUR



more mobile: fewer middlemen, hired transporters to cut risk as they move consignments, and tie-ups with narcotics and arms syndicates.

- More than a dozen arrests over the past seven weeks in ongoing probes by forest officials of Maharashtra and Madhya Pradesh, and the Centre's Wildlife Crime Control Bureau (WCCB) have partly uncovered one of multiple "verticals" of this module operating mainly through the Myanmar border. While the CBI and the Department of Revenue Intelligence (DRI) are following separate leads, the ED has also been roped in to track the money trail.

- The latest set of poachers, according to sources based in Nagpur who are linked to the investigation, have been "in this business for generations" but "unlike their fathers who depended solely on middlemen, they are internet savvy and active on social media". "Though barely educated, they have no problem running bank accounts, tracking online payments, and booking consignments and flight tickets," the sources said.

Do You Know:

- For decades, the tiger mafia in India preferred the shortest routes to China's demanding markets: through Nepal and Tibet. The longer northeastern route to Myanmar, meanwhile, was the mainstay of rhino horn traders who took consignments out of Assam.
- Since the 1990s, periodic seizures of pangolin scales in Meghalaya and Mizoram did point to the northeast route for wildlife contraband sourced from central India although tiger traders started significantly realigning their supply lines only just before the Covid pandemic. But even as the Myanmar route got busy with consignments of tiger bone and skins by 2022, the agencies tasked with busting them continued to operate in trenches.
- After Rajasthan's Sariska reserve lost all its tigers to poaching by 2005, the Government initiated a series of reforms by establishing the National Tiger Conservation Authority (NTCA) and the Wildlife Crime Control Bureau (WCCB) in 2007. Earlier, the CBI handled major tiger poaching cases, and even with WCCB in place, it pursued occasional cases along with DRI to meet their mandate of combating wildlife crime.

WHY HAS INDIA GOT ANOTHER TIGER RESERVE?

The story so far:

On March 9, Environment Minister Bhupender Yadav announced that the Centre had declared the Madhav National Park in Madhya Pradesh as the country's 58th tiger reserve. This is the ninth tiger reserve in the State, the highest among the States. Maharashtra has six; Rajasthan, Tamil Nadu, and Karnataka have five each.

What is the rationale behind setting up tiger reserves?

While tigers were historically abundant in India, hunting, poaching and the colonial exploitation of forests for timber started a precipitous decline in their numbers in the early 20th century. It was estimated in 1964 that there would have been around 40,000 tigers in the country at the turn of the 20th century. By the 1960s, these numbers were down to between 2,000 and 4,000, attributed to wanton hunting aided by a proliferation of gun licences issued in the years following 1947, improved access to the forest, clearing of large tracts of forests for various purposes, mushrooming of the new businesses of "Shikar Companies" and fur trade.



Following an alarm raised by naturalists, the Indian Board for Wild Life (IBWL) — the earlier avatar of the National Board for Wild Life — in a meeting in New Delhi in July, 1969 recommended a total ban on the export of all wild cat skins, including tigers. The same year, the 10th Assembly of International Union for Conservation of Nature met in Delhi and included the tiger in its “Red Data Book” as an endangered species and adopted a resolution calling for a ban on the killing of tigers. When numbers further dwindled to nearly 1,863, then Prime Minister Indira Gandhi commissioned an 11-member Task Force to investigate the problem and prepare a project to preserve the tiger in the wild in India. In August 1972, the Task Force recommended eight tiger forests spread across India to be brought under the purview of ‘Project Tiger,’ as this mission came to be called. On April 1, 1973, Project Tiger was inaugurated at Corbett tiger reserve with nine tiger reserves announced across India — Corbett (then in Uttar Pradesh, now in Uttarakhand), Palamau (then in Bihar, now in Jharkhand), Simlipal (Odisha), Sundarbans (West Bengal), Manas (Assam), Ranthambore (Rajasthan), Kanha (Madhya Pradesh), Melghat (Maharashtra) and Bandipur (Karnataka) – which were representative of the various tiger habitats in the country.

What does establishing a tiger reserve entail?

The Project Tiger (replaced by the National Tiger Conservation Authority (NTCA) since 2006) guidelines made it mandatory for every tiger reserve to be managed in accordance with a site-specific management plan. Project Tiger established a template for scientific management of protected areas in India. It laid down the concept of establishing a ‘core zone’ and a ‘buffer zone’, prescribed interventions for protection, habitat improvement, field data collection relating to change in the composition of flora and fauna on account of protection, animal estimation and other aspects. The guidelines also established Tiger Conservation Plans to ensure: i) Protection and site specific habitat managements for viable population of tigers, prey and co-predators, ii) ecologically compatible land uses in the tiger reserves and areas linking one protected area or tiger reserve to another for addressing the livelihood concerns of local people. The NTCA guidelines for preparing Tiger Conservation Plans, cognizant of constraints imposed by small reserves embedded in human land uses, aimed to create source populations within tiger reserves with corridor links between sources and to sink habitats. Sources are places where animal numbers are growing, and sinks are where they are dwindling, and must be supplemented by bringing in animals to boost numbers to sustainable numbers. To establish a reserve, the Centre gets a proposal from the State, the NTCA recommends the proposal to the State after due diligence, the State government notifies the area as a Tiger Reserve.

How are tiger reserves funded?

Under Project Tiger guidelines, 60% of the funds for conservation are provided by the Centre, while the rest is borne by the concerned State. In the case of Northeastern and Himalayan States, the Centre covers 90% of the funds. These activities include anti-poaching initiatives, habitat improvement and water development, addressing human-animal conflicts, designating inviolate spaces, and relocating villages from critical tiger habitats within a timeframe by offering a better relocation package. It also supports States in settling the rights of displaced people, rehabilitating traditional hunting tribes living in and around tiger reserves, conducting independent monitoring, and evaluating tiger reserves.

Why is the Madhav National Park important?

With an estimated area of 165.32 sq km, it was first notified as a National Park in Madhya Pradesh in 1956 under the MP National Parks Act, 1955. Now, the Madhav National Park and tiger reserve



has a core area of 355 sq km, with a buffer zone of 4-6 sq km. It did not have a tiger population till 2023, when a male tiger and two females were relocated there. Today, the population has grown to seven. However, the Madhav reserve is an important connecting corridor to the Ranthambore Tiger Reserve in Rajasthan. It is also connected to Kuno National Park, which now has a captive cheetah population. Experts speculate that there could be competition among these predators for the prey base of deer, leading to its complex dynamics.

Madhya Pradesh boasts several prominent tiger reserves, such as Kanha, Panna, and Bandhavgarh. Due to successful conservation strategies, the State has the highest number of tigers (785). However, the Kuno-Madhav forest division, in the northern part of the State, has historically been relatively neglected. With Kuno gaining prominence as an emerging cheetah reserve, a more centralised management strategy is expected to oversee both cheetah and tiger populations, contributing to the region's long-term development as a wildlife spot.

There are plans to introduce lions from Gir in Gujarat into Kuno National Park, after the Supreme Court green-lit the project. In March 2023, the government told the Supreme Court that relocating lions to Kuno may create tensions between the pride and the cheetahs imported from Namibia and South Africa, and sought time to re-examine the issue. But if lions were to be relocated to Kuno, it would also mean more funds — central and international — for conservation.

Do You Know:

- Project Tiger was launched with nine tiger reserves — Manas (Assam), Jim Corbett (now in Uttarakhand), Kanha (Madhya Pradesh), Palamau (now in Jharkhand), Ranthambore (Rajasthan), Simlipal (Odisha), Melghat (Maharashtra), Bandipur (Karnataka), and the Sundarbans (West Bengal).
- The purpose of the reserves was to create a “core” — where felling, grazing, and movement of people, except those involved in conservation activities, was prohibited — and a “buffer zone”, where human activity would be limited, ‘Joining the Dots’, the report of the 2005 tiger task force under Sunita Narain, noted.

India is home to an estimated 3,681 tigers (range 3167-3925), as per the last population estimation released in 2022-23. The big cats occupy around 89,000 sq km area, as per NTCA. That is equivalent to the area of Jordan, and larger than that of Austria.

Tigers are broadly distributed across the following “landscapes” — Shivalik Hills and Gangetic Plains, Central Indian Highlands and Eastern Ghats, Western Ghats, North Eastern Hills and Brahmaputra floodplains, and the Sundarbans.

Corbett, with 260 tigers, boasts the largest population of the big cat followed by Bandipur (150), Nagarhole (141), Bandhavgarh (135), Dudhwa (135), Mudumalai (113), Kanha (105), Kaziranga (104), Sundarbans (100), Tadoba-Andhari (97), Sathyamangalam (85), and Pench (77).

MENHIR

The Mudumal megalithic menhirs in Telangana's Narayanpet district will soon be the second UNESCO World Heritage Site in the state, after being one six Indian sites to be added to the tentative list by the World Heritage Centre in 2025.



- A menhir is a standing or an upright stone, which is usually tapered at the top. It is man-made, in that it is sculpted and placed by humans, and usually quite large — the largest surviving menhir, the Grand Menhir Brisé or the Great Broken Menhir in Brittany, France, once stood at 20.6 m tall.
- Most people know of menhirs today as the stones that Obelix carries on his back. The affable Obelix, from the French comic book series Asterix by René Goscinny and Albert Uderzo, is bestowed with superhuman strength, allowing him to single-handedly sculpt and deliver menhirs to customers. Of course, he often uses these stones to thump any passing Roman soldiers, at times to protect his fiercely independent village, at times simply for some fun.
- Some old stones deserve UNESCO recognition because they give us insight into the ingenuity of early humans. Not only do these tonnes-heavy stones need a solid understanding of physics to be sculpted and move to precise locations, the precision of their placement itself tells us how much our ancestors knew about astronomy and solstices. They give us insight into how the cultures who built them saw and understood the world.

Do You Know:

- The term 'menhir' is derived from the Brittonic "maen" meaning "stone", and "hîr" meaning "long", and entered the archaeological lexicon in the late 18th century. It was first used by French military officer and Celticist antiquarian Théophile Corret de la Tour d'Auvergne.
- The ones in Europe were originally associated with the Beaker culture who lived during the late Neolithic and early Bronze Age — roughly 4,800 to 3,800 before present (BP). But the oldest European menhirs are today dated to as early as 7,000 BP. The ones in Mudumal, dated to roughly 3,500 to 4,000 BP, are the oldest known menhirs in India.
- Menhirs can either be found alone, or as a part of a larger complex of prehistoric megaliths, simply, large stone structures. While the exact purpose of many megalithic sites is debated, they likely served ceremonial functions. Some were markers of graves, while others might have served some astronomical purposes.
- The Mudumal site has been described as a "megalithic astronomical observatory" by the UNESCO dossier. "... Some menhirs are aligned with the rising and setting sun during the summer and winter solstices, suggesting their use as an ancient observatory," the dossier says. Today, the Mudumal menhirs are closely associated with local legend, with "one particular menhir being worshipped as Goddess Yellamma".

PERIYAR DID CALL TAMIL A 'BARBARIC' LANGUAGE, BUT WAS ALSO CRUCIAL TO ITS GROWTH

DURING the heated discussion in Parliament last week over the National Education Policy (NEP), with the DMK claiming "forcible imposition of Hindi", Union Finance Minister Nirmala Sitharaman hit back saying that while the DMK attacks the BJP, it reveres the person who once called Tamil "a barbaric language".

- The reference was to Periyar, the founder of the self-respect movement out of which the Dravidian political ideology was born, and one of the greatest rationalists and social reformers of Tamil Nadu.



- The DMK reacted with outrage, saying Sitharaman's remarks were reflective of the BJP's stand and insulted the Tamil nationalist sentiment.
- Periyar who kept his own organisation, Dravidar Kazhagam (DK), away from electoral politics, moderated his views over time. For example, he criticised the classic Tamil text Thirukkural but later also promoted its reformist aspects.
- During the first anti-Hindi movement in the 1930s, Periyar mobilised Tamil scholars. His fight against Sanskrit – and, by extension, upper caste – hegemony, also led him to back Tamil. When the University of Madras was founded in 1857, under the British, it didn't have a Tamil department. When a Tamil department was established 70 years later, in 1927, Brahmin groups protested, demanding Sanskrit's supremacy.
- In the university's Madras Christian College, Tamil was taught as a minor subject. Tamil scholar Maraimalai Adigal, the leader of Tanittamil Iyakkam (Pure Tamil Movement), had to quit the college after Tamil was removed as a second language by the University of Madras.
- Sitharaman's remarks reflect a common misreading of Periyar, says Kali Poongundran, a close aide of Periyar and the vice-president of the Dravidar Kazhagam. "His critique of Tamil came from frustration – to remind people that linguistic pride alone wouldn't uplift the oppressed... Periyar knew language alone wouldn't break oppression. His real fight was against Brahminical dominance in religion, governance, and education. Tamil was one front in a larger war."
- Interestingly, given the language debate currently on, Poongundran says Periyar was all for learning English. "He even urged people to speak English at home to climb the social ladder... His argument that Tamil alone cannot ensure social mobility remains relevant today," Poongundran says.

Do You Know:

- The social reformer did refer to Tamil as "a barbarian language", but it was because of his belief that it had "not evolved or reformed" over time, "clinging to ancient glories" without adapting to modern needs.
- As a proponent of the self-respect movement who spoke of human welfare above all else, Periyar rejected linguistic nationalism or pride – as he did any affiliation with race, religion or caste. Hence, the focus of Tamil scholars on Bhakti literature and ancient traditions which perpetuated caste and superstition was attacked by Periyar, who chose a blunt, provocative approach deliberately, to best catch people's attention.
- In December 1970, in a piece in the Viduthalai daily, Periyar put this in his own words: "I bear no personal animosity towards Tamil. My concern is that Tamil has not evolved to meet the demands of a modern language, particularly in conveying scientific knowledge. In contrast, English is rich in science and knowledge. This disparity troubles me."
- Periyar's writings up to 1949 reflect his push for Tamil to be used as a tool for transformation, equality and dignity. This was in tune with the realities of the time, with caste discrimination at its peak, with linguistic purism seen by Periyar as a part of that. The DMK incidentally was founded only in 1949, and its embrace of Tamil as a part of Dravidian identity and pride followed after that.



- Periyar also led the fight against Kula Kalvi Thittam, the Hereditary Education Policy of the early 1950s, often seen as Tamil Nadu's first "NEP encounter". It called upon students to learn their parents' trades, such as farming or as barbers, entrenching caste-based inequality.

SHORT NEWS

JNANPITH AWARD: FIRST FROM CHHATTISGARH

— Eminent Hindi litterateur, Vinod Kumar Shukla, 88, has been named the recipient of the 59th Jnanpith Award 2024 for his contributions to Hindi Literature.

— The Jnanpith Award is the highest literary honour in India given to writers who have excelled in literature in different Indian languages.

Don't confuse the Jnanpith Award with the Sahitya Akademi. Every year, the Sahitya Akademi announces awards for authors of works of outstanding literary merit in Indian languages. Awards are currently given for 24 languages; the most recent additions being Bodo and Santhali in 2005.

— Shukla, a renowned Hindi writer, poet and novelist, becomes the first person from Chhattisgarh state who is being awarded this honour.

— His first booklet of poetry 'Lagbhag Jai Hind' was published in 1971. His major novels include 'Naukar Ki Kameez', 'Deewar Mein Ek Khidki Rahti Thi' and 'Khilega To Dekhenge'.

— It was constituted in 1961 and every year creative literary outputs from writers in any of the 22 languages recognised by the Constitution along with English which was included in 2013 are awarded. The first Jnanpith Award was given to G.S. Kurup for his contribution to Malayalam literature.

SMART CITIES MISSION

— The Smart Cities Mission is set to end on March 31, though the 7% of the ongoing projects are likely to go beyond the deadline.

— The mission was launched in 2015 with the objective of creating 100 smart cities. The cities were selected in rounds of competition held from January 2016 to June 2018, and they had five years from their respective selection, that is 2021 to 2023, to complete the projects.

COMPETITION COMMISSION OF INDIA

— The Competition Commission of India (CCI) raided the offices of media agencies over alleged fixing of ad rates and discounts.

— It is a statutory body consisting of a Chairperson and not more than 6 Members appointed by the Central Government.

— It aims to eliminate practices having adverse effect on competition, promote and sustain competition, protect the interests of consumers, and ensure freedom of trade.



COMBINED MARITIME FORCES (CMF)

- New Zealand welcomes India's full membership to the Combined Maritime Forces (CMF).
- The CMF is a multinational maritime partnership that upholds the International Rules-Based Order (IRBO) by countering illicit non-state actors on the high seas and promoting security, stability and prosperity.
- It comprises five task forces: CTF 150 (Gulf of Oman security and counter-terrorism), CTF 151 (counter piracy), CTF 152 (Arabian Gulf security and cooperation), CTF 153 (Red Sea/Gulf of Aden security and cooperation) and CTF 154 (maritime security training).

TREN DE ARAGUA (TDA)

- US President Donald Trump invoked an 18th-century law for the first time since World War II in a bid to deport members of the Venezuelan-origin gang Tren de Aragua.
- The Tren de Aragua (TdA), or "train from Aragua" in Spanish, was founded in 2014 in the Tocarón prison in the state of Aragua in central Venezuela. The name is attributed to a union of railroad workers who were building a railroad connection between Caracas and Aragua.
- The TdA emerged as part of the "pran" system, where incarcerated crime bosses organised elaborate drug and kidnapping networks and collaborated with gangs outside prisons.
- The onset of Venezuela's economic crisis in 2017 led the TdA to expand its criminal operations to neighbouring Colombia, Peru and Chile.

CARACAL

- Rajasthan's Forest Minister shared a photo on social media to celebrate the "first photographic record" of a caracal in Mukundra Hills Tiger Reserve of Rajasthan.
- Caracal has long legs, a short face, long canine teeth, and distinctive ears — long and pointy, with tufts of black hair at their tips. The iconic ears are what give the animal its name — caracal comes from the Turkish karakulak, meaning 'black ears'.
- In India, it is called siya gosh, a Persian name that translates as 'black Ear'. A Sanskrit fable exists about a small wild cat named deergha-karn or 'long-eared'.
- Besides India, the caracal is found in several dozen countries across Africa, the Middle East, Central and South Asia.
- IUCN status: Least Concerned
- Wildlife Protection Act, 1972: Schedule I

EQUINOXES AND SOLSTICES

- March 20 marks the start of the spring season for the Northern Hemisphere and fall in the Southern Hemisphere, with the arrival of the vernal equinox.



— Equinoxes occur twice a year, in March and in September. On this day, the sun appears directly above the Equator at noon. It is the only time when both poles are sunlit at the same time.

— Solstices mark the days when the Earth is extremely tilted toward or away from the sun. On these days, each hemisphere gets significantly different amounts of light and warmth from the sun, with the days and nights being just as lopsided.

— The summer solstice in the Northern Hemisphere, between June 20 and 22, creates the longest day and shortest night of the year.

RING PLANE CROSSING

— Saturn's rings, which are primarily made of ice and rocks, have disappeared from view due to the phenomenon dubbed as "ring plane crossing".

— It usually occurs every 13 to 15 years. In this the planet's rings perfectly aligning with Earth's line of sight, causing them to go nearly invisible. Once these rings disappear, Saturn appears as a pale yellow sphere when viewed via the majority of telescopes.

— Saturn completes one orbit around the Sun every 29.4 Earth years. As the planet rotates on an axis at 27 degrees, sometimes the rings are tilted, which is when observers on Earth get a good view of them.

VALUEATTICS RE

— Valueattics Re, a company promoted by Prem Watsa-backed FAL Corporation and GoDigit Founder Kamesh Goyal, is the first private reinsurer in India to be granted a reinsurance license. Currently, the public sector General Insurance Corporation (GIC Re) is the only reinsurance company operating in India.

— Reinsurance companies play a crucial role in the insurance industry by providing insurance to other insurance companies, acting as a second level of insurance or insurers' insurer to manage and transfer risk, particularly large or catastrophic losses.

GAYATRI CHAKRAVORTY SPIVAK

— Gayatri Spivak, celebrated literary critic and postcolonial scholar, has won the 2025 Holberg Prize, considered the equivalent of the Nobel Prize in the field of humanities, social sciences, law or theology research.

Spivak's "critique of structures of power and knowledge in an unequal world" and efforts to combat "illiteracy in marginalised rural communities across several countries" make her a "highly worthy recipient of the prize" reads the citation note.

JUSTICE JOYMALYA BAGCHI

— Former Calcutta High Court judge Justice Joymalya Bagchi was sworn in as a judge of the Supreme Court by Chief Justice of India Sanjiv Khanna.



— Justice Bagchi has a tenure of more than six years in the Supreme Court, during which he will also serve as the Chief Justice of India from May 25, 2031, to October 2, 2031.

— Articles 124(2) and 217 of the Constitution deal with appointing judges to the Supreme Court and High Courts. The appointments are made by the President, who is required to hold consultations with “such of the judges of the Supreme Court and of the High Courts” as he may think is needed.

AHOM GENERAL LACHIT BARPHUDAN

— Union Home Minister Amit Shah inaugurated the first phase of the revamped police academy in Assam’s Dergaon, hailing the state government’s decision to name it after storied Ahom general Lachit Barphukan.

— Lachit Barphukan is known for his leadership in the 1671 ‘Battle of Saraighat.’ He is considered one of the greatest of Assamese heroes. 24th November is celebrated as the ‘Lachit Diwas’ to mark his birth anniversary.

KIRSTY COVENTRY

— Former Olympic champion swimmer from Zimbabwe, Kirsty Coventry, was elected as the president of the International Olympic Committee (IOC) in Greece.

— In the organisation’s 130-year history, this is the first time a woman — and an African — has been elected to the all-important post.

— She was the back-to-back Olympic champion in the 200 meters backstroke in 2004 and 2008. She retired from swimming after the Rio de Janeiro Olympics in 2016 with seven Olympic medals, more than anyone else from Africa.. She is also currently Zimbabwe’s minister of youth, sports, arts and recreation.

SEPAK TAKRAW

— The BIHAR Sepaktakraw World Cup 2025 is being held in Patna, Bihar, from March 20 to March 25, 2025.’

— According to the website of [sepaktakrawindia](http://sepaktakrawindia.com), SepakTakraw is a traditional Malaysian sport and is popular in South East Asian countries. It is played in Malaysia, Singapore, Thailand, Philippines, Brunei, and Indonesia. It was introduced in India in 1980.

— Sepak is the Malay word for kick, and takraw is the Thai word for woven ball. The ball is spherical and made out of synthetic fibre. It is also known as ‘kick volleyball’.

MUZHARAS:

March 19 commemorates the anniversary of the Muzhara movement, a significant agrarian struggle in Punjab. The movement began in the 1930s and later renamed the PEPSU Muzhara movement. The muzharas were landless tenant farmers seeking ownership rights on the land they had cultivated for generations. The British also forced some small farmers to surrender the land they owned and work as muzharas.



BUSINESS & ECONOMICS

TRUMP AND A WEAKER DOLLAR

This week the focus is on the other policy option that the Trump administration has — the devaluation of the US dollar — an option that many believe is likely to be used soon.

— The US posted an over \$1 trillion trade deficit in 2024. In other words, the total value of goods imported (from the rest of the world) by the US was \$1 trillion more than the value of the goods exported (to the rest of the world) by the US. Further, 2024 was reportedly the fourth consecutive year when the US clocked a trillion dollar trade deficit.

— Now, the fact is that, notwithstanding these historic trade deficits, the US has also had historically low unemployment rates. So arguably, the main issue isn't more job creation; the central goals for Trump are more manufacturing inside and lower trade deficits.

— Given the strength of the US dollar, there are two main ways in which Trump could have gone about these goals- Slap punitive tariffs on all its trade partners or the US convince other countries to allow the dollar to lose value (devalue) relative to other currencies.

Do You Know:

— Plaza Accord: In 1985, the US signed the Plaza Accord — ed after the Plaza Hotel in New York that was the venue — with the other top economies of that time: Japan, Germany, France and the UK (the G-5). The rumoured Mar-a-Lago Accord essentially refers to a Plaza Accord-like agreement that Trump may sign at a later stage.

— A fall in the US exchange rate meant a rise in the exchange rates of all the other currencies (German Mark, Japanese Yen, British Pound, French Franc).

— These countries knew that a high exchange rate would immediately hurt their exports competitiveness but the US convinced them to accept dollar devaluation as against facing the uglier option: High tariffs — something that Trump is doing now.

— From the US perspective, they were successful to the extent that in the short to medium term they brought down the US exchange rate and relieved it of the yawning trade deficits. But the fact that four decades later, the US is back to where it was, suggests that this is not a one-time solution.

FARM FIRE IN CHINA-US TRADE

In his trade wars with Canada and Mexico, US President Donald Trump has exempted many goods from the blanket 25% tariff he had earlier levied on all imports from the two countries.

- China's tit-for-tat actions have basically targeted US agricultural produce. On March 4, it imposed a 10% tariff on imports of soyabean, sorghum, beef, pork, dairy and aquatic products, fruits and vegetables, and 15% on wheat, corn (maize), cotton and chicken, from the US.

- These additional duties — a response to the “unilateral tariff increase by the US” that “undermines the multilateral trading system...and disrupts the foundation of China-US economic and trade cooperation” — aren't insignificant.



- But China's tariff actions also appear to fit in with a national strategy to enhance food security through increasing domestic production and reducing import dependence alongside diversification of its supplier base.

- China is a massive importer of agri-commodities. In 2023-24, it was the world's No. 1 buyer of soyabean, rapeseed, wheat, barley, sorghum, oats and cotton, and No. 2 for corn and palm oil. It was also the biggest export market for US soyabean, cotton and coarse grains (excluding corn), while the second largest for its tree nuts (mainly almonds, pistachios and walnuts) and third for beef, pork, dairy products and poultry meat.

Do You Know:

- In April 2023, the Chinese Ministry of Agricultural and Rural Affairs unveiled a report that projected an increase in the country's domestic output of grains (including soyabean) from 694 mt to 767 mt and a reduction in imports from 148 mt to 122 mt by 2032.

- China has two state-owned giants: COFCO (China Oil and Foodstuffs Corporation) and Sinograin (China Grain Reserves Group). The first one is a global trader that handled over 122 mt of agri-commodities with revenues of \$50 billion in 2023. COFCO has been promoted as a rival to the four 'ABCD' dominant western commodity trading firms: Archer Daniels Midland, Bunge, Cargill and Louis Dreyfus. Sinograin, established in 2000, is China's national stockpiler tasked with the storage and management of its centralised reserves of grain, oil and cotton.

- China, which began augmenting its strategic reserves following the 2008 global food price crisis, substantially stepped up imports of corn, barley, wheat, sorghum and even oilseeds, cotton and rice from 2020-21 (see accompanying table). The unprecedented import-led stockpiling — amid the pandemic, Russia-Ukraine war and extreme weather-induced worldwide supply disruptions — was undertaken through COFCO and Sinograin.

US TOP MARKET FOR INDIA'S ALUMINIUM, NEW TARIFFS THREATEN \$1-BILLION EXPORTS

The Donald Trump administration's decision to raise tariffs on aluminium imports from 10 to 25 per cent starting March 12 is set to hit Indian exporters, for whom the United States has become the largest international market for aluminium products.

- While India accounts for only 3 per cent of US aluminium imports, it is the largest supplier of aluminium conductors — stranded wires and cables used in electrical applications. India is also the world's second-largest aluminium producer after China, though much of its output is consumed domestically.

- As the new 25 per cent tariffs are significantly broader than those imposed in 2018, covering a wider range of semi-finished and finished aluminium products, it may disrupt the recent growth momentum of firms with strong export focus on the US. However, while some may see a hit in revenues, the overall impact is expected to be limited, as aluminium exports form a small share of business for most companies. The US, despite being India's top market, accounts for around 12 per cent of total aluminium exports.

- In 2024, the US imported nearly 38 per cent of aluminium conductors by weight from India, valued at \$130 million. In 2023, imports peaked at \$261 million, rising from just \$40 million in 2021, data from the United States International Trade Commission (USITC) showed.



- In 2018, Trump had imposed 25 per cent tariffs on steel and 10 per cent tariffs on aluminium imports. “But exemptions and loopholes have permitted evasion of the tariffs and weakened the effectiveness of the programme,” the White House said in a release on February 11, soon after Trump’s second term started.
- India did not receive any exemptions, and export of aluminium conductors saw an increase despite tariffs. The impact of the latest tariffs is likely to be higher on the aluminium industry as compared to the steel industry.
- The spillover effect on India’s steel industry could be more pronounced if China, also hit by the latest tariffs, diverts excess steel into the Indian market.
- While the US ranked only sixth among destinations for India’s iron and steel exports — valued at \$476 million (Rs 3,935 crore) in 2023-24 — it was the largest market for iron and steel articles, with exports touching \$2.8 billion (Rs 23,128 crore) in the same period. As with aluminium, the Trump administration’s latest tariffs extend beyond raw steel to include steel products as well.

Do You Know:

- The new 25% tariffs imposed by the US cover a wider range of semi-finished and finished aluminium products, along with derivative goods — from machinery components to knitting needles — posing challenges for India’s fragmented downstream aluminium industry.
- Tariffs are taxes or duties imposed by a government on imported goods and services. Their objective is to make foreign products more expensive compared to domestically produced goods, thereby encouraging consumers to prefer local products. Tariffs also act as a protective measure for domestic industries against foreign competition. Additionally, they serve as a source of revenue for the government.

INDIA, NEW ZEALAND TO RELAUNCH FTA TALKS AFTER A GAP OF 10 YEARS

India and New Zealand announced the relaunch of free trade agreement (FTA) talks after a 10-year break, following a meeting between New Zealand’s Trade Minister Todd McClay and Commerce Minister Piyush Goyal here, the Ministry of Commerce and Industry said.

- The announcement of the talks comes as India has stated its aim to conclude trade negotiations with the US and the European Union this year. Trade talks with Australia for a comprehensive deal are also in progress along with renegotiation of the Association of Southeast Asian Nations (ASEAN) trade deal.
- Trade experts said a major challenge in negotiations with New Zealand has been the country’s demand for greater access to India’s dairy market, which India has traditionally protected to support millions of farmers. However, US pressure on India to open its agriculture and dairy sectors could influence the negotiations this time around, think tank Global Trade and Research Institute (GTRI) said. The trade talks were announced as the Prime Minister of New Zealand, Christopher Luxon, began his four-day visit to India on Sunday, during which he is set to meet Prime Minister Narendra Modi.

Do You Know:

- A major challenge in the renewed talks will be the disparity in tariff structures. New Zealand’s average import tariff is only 2.3 per cent, with over half of its tariff lines already duty-free, meaning



Indian goods already have substantial access to its market. In contrast, India's average tariff stands at 17.8 per cent, meaning it would have to make significant reductions, making a traditional FTA less attractive for India.

- India's key goods exports to New Zealand include clothing, fabrics, and home textiles, valued at \$72.8 million. Medicines and medical supplies followed closely at \$67.5 million, while refined petroleum exports totalled \$52.2 million. Other notable exports included automobiles and parts.

THINKING A BIT DIFFERENTLY

Rajesh Kumar Singh, Karamjeet Kaur Writes: Revised model Bilateral Investment Treaty text is an opportunity to tailor it to the current global economic realities

- An announcement on the revision of the model Bilateral Investment Treaty (BIT) text was made in the Union Budget 2025 to make it more investor-friendly. The last revision was in 2015, which was aimed at balancing investors' rights and obligations. As the government considers a new version, it is imperative that the legalese of the text reflects the current economic realities.
- BITs, also referred to as International Investment Agreements (IIAs), are a tool for providing assurance to foreign investors against "measures" that may adversely impact their investments. These treaties are legally enforceable. They provide rights to investors (through the investor-state dispute settlement) or to home states (through state-state dispute settlement) to bring a claim against a host state (receiving foreign investment).
- As per UNCTAD data, as many as 3,291 IIAs (including 2,831 BITs) have been inked so far and many more are still being negotiated.
- A "model" text in investment treaty negotiations is a standard base position of a country on its investment treaties. The final agreement is an outcome of a negotiated position between the partner countries. While it is not binding to have one for negotiating a treaty, it generally helps to have one as a guiding document for the negotiators. Countries generally revise their model text at regular intervals. For instance, the US developed a Model BIT text in 1994, which was replaced in 1998, followed by newer versions in 2004 and 2012.

Do You Know:

- BITs find their genesis in the mid-20th century. Most of the early BITs were signed between a developed capital-exporting country and a developing capital-importing country. Scholars have ascribed this to two fundamental systemic factors. One, decolonisation and the rising trend of economic nationalism. This made BITs an instrument to protect the private property that foreign investors owned abroad. Two, most of the FDI in the 1950s and 1960s was either resource-seeking or focused on manufacturing through import substitution industrialisation policies and thus the need for certain "minimum standards of protection" of investments.
- In the early 1990s, with the NAFTA agreement, pre-establishment commitments were introduced in investment treaties. The traditional commitments were on the host state to provide "protection" for foreign investments and investors.
- In March 2024, India signed a Free Trade Agreement (FTA) with a grouping of four European countries-EFTA. This agreement's investment chapter weaved-in a quantifiable commitment on investment and direct employment by EFTA in India.



- The MFN clause was developed in the context of multilateral agreements. Simply put, an automatic MFN implies that the additional commitments offered to others in future, automatically apply to the existing trade partners. This concept was borrowed into BITs as well. Inclusion of MFN in BITs ensures that similar “treatment” (in terms of laws, rules, regulations, orders, inactions etc) is given to investments and investors of all treaty partners.
- The Model BIT of 2015 did not include MFN. While there is a history of how this clause has been misused in the context of investment agreements, there is a more basic issue here.

HIGH BASE EFFECT

India's goods trade in February saw its steepest decline in nearly two years. Exports fell by 10.9% to \$36.91 billion, while imports dropped 16.3% to \$50.96 billion, resulting in the smallest trade deficit in over three years (42 months) at \$14 billion. While a shrinking trade deficit driven by rising exports would have been a positive development, the simultaneous decline in exports and imports is a cause for concern. Experts partly attribute this narrowing deficit to a high base effect, as exports in February last year, a leap year, stood at \$41.4 billion and imports at \$60.92 billion. However, exporters also report a trend of American importers holding back on orders, fearing the reciprocal tariffs set to take effect on April 2, as announced by U.S. President Donald Trump on February 13. This announcement came just before his meeting with Prime Minister Narendra Modi, where they unveiled an ambitious plan to boost bilateral trade to \$500 billion by 2030 and finalise a free trade agreement (BTA) in the months ahead. Despite Commerce Minister Piyush Goyal's diplomatic outreach to U.S. Commerce Secretary Howard Lutnick this month, discussions yielded little beyond a commitment to continue BTA negotiations. The looming threat of reciprocal tariffs has unsettled Indian exporters, as the U.S. is India's second-largest trading partner, accounting for \$118.3 billion in trade last fiscal year. It is also the only country among India's top five trading partners with which India enjoys a trade surplus.

Imports also declined sharply, led by a 62% plunge in gold imports compared to last February. This drop is linked to domestic gold prices surging to ₹87,886 per 10 grams last week, dampening consumer demand. Oil imports also fell nearly 30% as India diversified its supply sources in response to additional U.S. sanctions on Russian oil producers and tankers in early January. By mid-2023, Russia accounted for over 40% of India's crude imports, a significant increase from less than 1% before western sanctions on Moscow following its 2022 invasion of Ukraine. If Washington moves to neutralise its trade deficit with New Delhi, India could face a 15% widening in its overall trade deficit, based on last fiscal year's \$241 billion shortfall. India must diversify its goods and services trade to reduce its heavy reliance on the U.S. Two potential markets are China and the U.K. While imports from China have contributed to about a third of India's trade deficit for over five years, India's trade imbalance with the U.K. accounted for less than 3% of its total deficit last fiscal year. The free trade agreement negotiations with the U.K. are an opportunity for India to shift this balance in its favour.

IN IT POLICY PIPELINE: `23K-CR ELECTRONIC SUBSIDY SCHEME FOR VALUE-ADD AND JOBS

THE IT Ministry has finalised the contours for an ambitious incentive policy for electronic components manufacturing, with an outlay of around Rs 23,000 crore, spread over six years, as the government looks to deepen domestic value addition after successfully localising smartphone assembly in the country.



- The components that the government is looking to target through the scheme include display modules, sub assembly camera modules, printed circuit board assemblies, lithium cell enclosures, resistors, capacitors, and ferrites, among others.
- Employment creation is also likely to see a major push through the scheme, with the government having set yearly direct job creation goals for participating entities. “Overall, the government is targeting that the scheme will help generate 91,600 direct jobs over the six-year period, with annual incentive payouts ranging from Rs 2,300 crore to Rs 4,200 crore, conditional on companies meeting investment, production and employment goals for the corresponding year.
- Despite being able to attract companies like Apple and Samsung to localise some of their overall assembly in India, the domestic value addition has been relatively low, around 15-20 per cent, with the government hoping to raise it to at least 30-40 per cent. This is why a scheme to encourage component manufacturing is being seen as an important second step.
- The scheme could offer three different kinds of incentives: depending on operational expenses, capital expenses, and a combination of the two. Operational incentives will be given based on net incremental sales, similar to PLI schemes, and capex incentives will be given on the basis of eligible capital expenditure.

PM INTERNSHIP SCHEME A ‘NATIONAL CAUSE’, MORE COMPANIES NEED TO CHIP IN, SAYS FM

Union Finance and Corporate Affairs Minister Nirmala Sitharaman has called on more companies to participate in the PM Internship Scheme (PMIS), citing larger national interest. Now, in its second round – still at the pilot stage – the scheme has drawn internship postings from 327 companies, up from around 280 in the first round.

- Announced in the Union Budget for 2024-25 last July, the scheme aims to provide internships to one crore youth in top 500 companies over five years.
- In the first round of the pilot, which was conducted between October and December last year, over 1.27 lakh opportunities were posted and over 82,000 offers were made to successful candidates. The number of candidates who accepted internship offers was lower than expected in the first round, with just around 8,000 taking up offers till February 6, The Indian Express had earlier reported.
- In the second round, which began in January, around 1.18 lakh internship opportunities are up for grabs, spread across 735 districts. The application window for the second round will close on March 31.
- The ministry has also taken steps to enhance access to the scheme in the second round. “The dashboard of the PMIS Portal has been simplified, made more user-friendly, and greater details of the opportunities and roles offered have been provided. Officials from the MCA, state governments, and industry partners interacted with the youth at more than 80 outreach events held at various educational institutes, such as colleges and Rozgar Melas,” the note added.

Do You Know:

- The scheme aims to provide internships to one crore youth in top 500 companies over five years. Under the scheme, an amount of Rs 4,500 will be provided per month by the Government of India



through Direct Benefit Transfer (DBT) with an additional Rs 500 offset to be provided by the company's CSR (corporate social responsibility) funds.

- The government will also provide a one-time grant of Rs 6,000 per annum for incidentals to cover miscellaneous expenses incurred by the selected candidate during the internship.
- The internship scheme was a part of the Prime Minister's Package for Employment and Skilling announced in FY25 Budget with an overall outlay of Rs 2 lakh crore.
- The package was allocated Rs 12,000 crore for this financial year, out of which Rs 10,000 crore was allocated to the Ministry of Labour and Employment for the three Employment Linked-Incentive schemes and Rs 2,000 crore was provided to the Ministry of Corporate Affairs for the internship programme.
- In the revised estimates for 2024-25, the amount allocated for the internship scheme was scaled down to Rs 380 crore. For 2025-26, an amount of Rs 10,831 crore has been provided for the internship scheme in the Budget, including Rs 59.77 crore of capital outlay.

IMPLEMENT DYNAMIC PRICING FOR AC CLASSES, REVIEW FARES TO ALIGN WITH COST: HOUSE PANEL TO RAILWAYS

While reiterating its earlier recommendation to increase passenger revenues by reviewing AC class fares, the parliamentary standing committee on Railways has said that the government should implement a dynamic pricing model for AC classes and premium trains. It must also ensure affordability for low-income passengers to balance "social obligations", the committee said.

- It added that a comprehensive fare review should be undertaken from time-to-time to align AC class fares with costs and ensure gradual, affordable adjustments for non-AC classes.
- The standing committee on Railways gave similar recommendations in its first report on Demands for Grants (2024-25) of the Ministry of Railways in December 2024.
- On the question of steps taken to increase Indian Railways' passenger revenues, the ministry said that the introduction of premium trains such as Vande Bharat Express and Amrit Bharat trains, rationalisation of flexi-fare schemes, and the expansion of freight and non-fare revenues through policies such as the Gati Shakti cargo terminal and e-auction for commercial contracts, etc., are among the initiatives to maximise traffic receipt.
- The ministry also said that the fares across travel classes were reviewed in 2020 for non-suburban trains, where 1 paisa per km was increased in ordinary non-AC classes and 2 paisa per km was hiked in Mail/Express non-AC classes. Fare for AC Classes was raised by 4 paisa per km, according to the railway ministry.

GOVT DEFERS SAT-BASED TOLLING OVER 'PRIVACY CONCERNS', TO GO WITH BARRIER-FREE SYSTEM

Taking into account concerns over security and privacy, the government has deferred the rolling out of its ambitious Global Navigation Satellite System (GNSS) for toll collection.

- In a written reply in RS Wednesday, Union Transport Minister Nitin Gadkari said, "The Apex Committee and High-Level Empowered Committee consisting of Experts from Industry and



Academia, in view of security and privacy considerations, breach and overall operational control, have recommended further deliberations for Satellite based Tolling.”

- “Series of meetings have been conducted by the Expert committee and as per deliberation, it is proposed to proceed with corridor/stretch-based projects for ANPR FASTag system (AFS)-based Barrier Less Free Flow tolling,” he said.
- Under the GNSS, the toll collection system work with the help of satellites and on-board unit (OBU) fitted vehicles and the toll is calculated based on distance traveled. In Barrier Less Free Flow tolling system, there are no physical plazas. Vehicles can go through toll section and the toll will be deducted with the help of Automatic Number Plate Recognition cameras using FASTag.
- Sources said that the GNSS has been put on hold as a decision was taken that it will be rolled out only when India has its own complete satellite system as there are serious privacy concerns regarding individuals and vehicle data.

Do You Know:

- The Ministry of Road Transport and Highways (MoRTH) has amended the National Highways Fee (Determination of Rates and Collection) Rules, 2008 to include provisions relating to GNSS-based electronic toll collection.
- The amendment makes a legal provision to earmark specific lanes to implement GNSS, and mandates the collection of toll through this new system.
- According to MoRTH, a pilot study for the implementation of GNSS-based tolling has been completed on the Bengaluru-Mysuru section of NH-275 in Karnataka, and the Panipat-Hisar section of NH-709 in Haryana.
- GNSS will allow toll or highway user fees to be collected without stopping the vehicle at a toll booth boom barrier in order for the FASTag barcode to be read.
- Vehicles can simply pass through designated GNSS lanes, which is seen as a long-term solution to congestion and pile-ups at toll plazas. A number of developed countries follow this system for efficiently collecting highway toll. For GNSS to work, owners will have to get a non-transferable “on-board unit” (OBU) fitted in their vehicles. GNSS OBUs could ultimately come factory-fitted in new vehicles in the same way as many showroom owners now attach FASTag stickers to new cars rolling out of their premises.
- FASTag, which uses Radio Frequency Identification (RFID) technology, was launched in India in 2015. It has been mandatory for the payment of user fee/ toll since February 2021, with a 100% penalty for cash or non-FASTag payments.

**INDIA’S OIL IMPORT DEPENDENCY ON COURSE TO HIT FRESH FULL-YEAR HIGH IN FY25
AMID GROWING DEMAND, STAGNANT DOMESTIC PRODUCTION**

Growing demand for fuel and other petroleum products amid stagnant domestic crude oil output led India’s reliance on imported crude oil increasing to over 88 per cent in the first 11 months of the current financial year ending March (FY25), indicating that the import dependency for the full financial year could breach the all-time-high level of the last financial year.



— India's energy needs are consistently growing, leading to higher oil imports. This is fuelled by factors such as growing energy-intensive industries, increased vehicle sales, a rapidly expanding aviation sector, growing consumption of petrochemicals, and a rising population.

— India's heavy reliance on imported crude oil makes its economy vulnerable to global oil price fluctuations. This also impacts the country's trade deficit, foreign exchange reserves, the rupee's exchange rate, and inflation rate, among others.

— The Indian government aims to reduce the country's reliance on imported crude oil but faces challenges due to sluggish domestic oil output amid rising demand. In 2015, the government aimed to reduce reliance on oil imports to 67 per cent by 2022. However, import dependency has only increased.

Do You Know:

— India's crude oil imports rose to 219.9 million tonnes (mt) in the 11 months to February from 213.4 mt in the year-ago period. Meanwhile, domestic oil production declined slightly to 26.2 million tonnes from 26.9 million tonnes.

— India—the world's third-largest consumer of crude oil and also one of its top importers—is a net exporter of petroleum products.

— Unlike many countries, India is seen as a major growth centre for oil demand given the future consumption potential and relatively low per-capita energy demand currently.

— The latest being the Oilfield (Regulatory and Development) Amendment Bill, which was recently passed by the Parliament.

— The government has implemented several policies to encourage investments in India's oil and gas exploration and production sector. It is also promoting electric mobility, biofuels, and other alternative fuels to reduce oil imports.

— While there has been an increase in electric mobility adoption and the blending of biofuels with conventional fuels, it is not sufficient to offset petroleum demand growth.

EXPRESS VIEW: CONCERNS OVER POWER SHORTAGE CALL FOR A CAREFUL REVIEW OF INDIA'S ENERGY MIX

Coal production in the country has now crossed a record 1 billion tonnes — this is in line with the action plan of the coal ministry, which had targeted an output of 1,080 million tonnes in 2024-25. Data from the ministry shows that coal production touched 997.83 million tonnes in 2023-24, up 11.7 per cent from 893.19 million tonnes in 2022-23. A substantial part of this is accounted for by Coal India and its subsidiaries. Production by Coal India had increased to 773.81 million tonnes in 2023-24, up from 703.20 million tonnes in 2022-23. Despite this record production, however, those managing the electricity grids are worried as summer approaches.

The problem, in part, stems from how India's energy mix has evolved in the recent past. Thermal power dominates India's baseload power capacity. In recent years, however, additions to thermal capacity have been muted — the installed capacity rose from 230 GW in 2019-20 to just 243 GW in 2023-24. Much of the increase in installed power capacity during these years has occurred in the renewables space — the installed capacity rose from 88.26 GW in 2019-20 to 143.64 GW in 2023-24 (renewables include solar, wind, bio-power and small hydro power). However, despite



this, renewables still account for just 13 per cent of all-India energy generation. During the summer months, the problem is acute as solar generation tapers off by the evenings while household demand remains high and storage capacities are limited. In order to fill this gap, baseload capacities are stepped up, but in the absence of an expansion in such capacities, there is a shortfall in supply. As per reports, electricity demand is expected to peak at 273 GW in June 2025 compared to a minimum of 135 GW in December-January. "Shortages are more likely to occur during non-solar hours in May, June, July and August 2025," says a report from the National Load Despatch Centre with the months of May and June identified as "high-risk months for shortages".

The National Electricity Plan (2017-22) had focused more on ramping up renewable capacities in the country. As per its assessment, the expected renewable (solar, wind, biomass and small hydro) capacity addition between 2017 and 2022 was pegged at 117.7 GW. However, the concerns that are being raised call for carrying out a more careful assessment of the country's energy mix — thermal, nuclear and renewables. As the economy continues its forward march, as electricity demand continues to rise — peak electricity demand is expected to touch 298.7 GW by 2026-27 — policy must ensure a steady supply of power.

HOW CLIMATE CHANGE IS AFFECTING INDIA'S WHEAT PRODUCTION CYCLE

India recorded its warmest February in 124 years this year. The India Meteorological Department has already raised an alarm for March, saying that the month will experience above normal temperatures and more than the usual number of days with heat waves. The period coincides with the beginning of India's wheat harvest season, and extreme heat poses a grave threat for the country's second-most consumed crop, after rice.

Wheat in India

In India, wheat is primarily grown in the northwestern parts of the Indo-Gangetic plains. Primary producers include the states of Uttar Pradesh, Punjab, Haryana, and Madhya Pradesh. Wheat needs a cooler season to grow, and the crop is usually sown between October and December. It is harvested between February and April in the rabi crop season.

The Indian government set a wheat procurement target of 30 million tonnes for the 2025-2026 rabi marketing season, news agency PTI reported in January. The lower procurement target comes despite the agriculture ministry aiming for a record wheat production of 115 million tonnes in the 2024-2025 crop year (July-June), the report added.

In 2024-2025, government wheat procurement was recorded at 26.6 million tonnes. While this exceeded the 26.2 million tonnes procured in 2023-2024, it fell short of the 34.15 million tonne target for the year.

In May 2022, India had prohibited wheat exports. This was shortly after Russia invaded Ukraine, a major wheat-producing country, which disrupted international availability of the food grain and triggered a global price hike.

Heat and wheat

Climate variability itself is not a new phenomenon, but it catches our attention when the crop growth season overlaps with heat wave conditions, Sandeep Mahato of the M.S. Swaminathan Research Foundation (MSSRF), Chennai, told The Hindu.



A 2022 study in the International Journal of Molecular Sciences noted that increasing global warming is causing heat stress that “triggers significant changes in the biological and developmental process of wheat, leading to a reduction in grain production and grain quality.”

According to the paper’s authors, heat stress is known to affect the growth and development of wheat by altering “physio-bio-chemical processes such as photosynthesis, respiration, oxidative damage, activity of stress-induced hormones, proteins and anti-oxidative enzymes, water and nutrient relations, and yield-forming attributes (biomass, tiller count, grain number, and size) upon exposure to temperatures above the optimum range,”

Stages of wheat growth

According to the UN Food and Agriculture Organisation, stages of wheat growth are defined based on how different organs of the plant develop. This can be broadly grouped into four stages:

- i. **Germination to emergence:** This includes the growth of the seed until the seedling breaks through the soil surface and the first leaf emerges.
- ii. **Growth stage 1:** Steps from emergence to double ridge. Shoots appear, and the plant growth shifts focus from producing primordial leaves to flowering structures called spikelets.
- iii. **Growth stage 2:** This stage lasts from double ridge to anthesis. This is where the focus of the plant shifts from the vegetative to the reproductive stage. This is also one of the stages where the plant is comparatively more susceptible to heat stress.
- iv. **Growth stage 3:** This stage includes the grain-filling period, from anthesis to maturity.

According to experts, the real problem starts with the oceans. The Indian Ocean is warming at an accelerated rate. A 2024 study conducted by scientists at the Indian Institute of Tropical Meteorology, Pune, noted that the water body will likely be in a “near-permanent heat wave state” mainly as a result of global warming by the end of the century.

The frequency of marine heat waves is expected to increase tenfold, from the current average of 20 days per year to 220–250 days per year, the study added.

A warming Indian Ocean will in turn alter India’s monsoon, on which most of the country’s agriculture depends. For example, the kharif or summer crop season is starting and ending late, which inevitably delays the beginning of the rabi season.

Wheat is a rabi crop. If its sowing starts late, the later stages of plant growth will coincide with early heat waves in India. February 2025 was warmer than usual, and similar trends have been predicted for March. This is also the peak season for wheat harvest, and the ideal temperature in the later stages of the plant’s growth should not cross 30° C.

“High temperatures cause early flowering and faster ripening, shortening the grain-filling period. This results in lighter grains with lower starch accumulation, reducing the total wheat output,” Prakash Jha, assistant professor of agricultural climatology at Mississippi State University, told The Hindu.



“Extreme heat causes wheat to develop higher protein content but lower starch, making the grain harder and affecting milling quality. Farmers may face lower market prices due to reduced grain weight and quality issues,” he added.

Low crop yield also tends to make farmers desperate and result in overuse of fertilizers, fungicides, etc. Nikhil Goveas, lead climate advisor with the Environmental Defense Fund, told The Hindu. “Higher but inefficient use of resources is another cascading effect of heat-stress challenges in crops.”

Adaptation and mitigation

Food security is central to the adaptation and mitigation strategies officials use to lower the heat stress on wheat crops.

“Wheat is ... important for farmers because it can be consumed immediately, so part of the produce is always saved for household consumption,” Goveas said.

Farmers rely on older varieties of the crop because accessibility is a challenge, with problems related to the supply chain, costs, etc. Climate-resilient varieties are important, but they are not a silver bullet solution to the challenge, Goveas added, “The problem is a deeper challenge of the climate crisis on our food systems. The earth is getting warmer. We need to think about not just one crop but all crops: get timings right, have our information and weather systems updated with the knowledge of what to expect, and undertake mitigation efforts against the challenges.”

“The larger question here is to be able to guarantee food security,” Mahato of MSSRF Chennai said. “We have to focus on addressing yield gaps. This ties into the issue of management of resources like fertilizers, pest control, etc.”

According to Mahato, immediate policy support to farmers to deal with heat stress effects on wheat can be in the form of compensation, but there are more long term solutions that need to be incorporated into our agricultural practices.

“Changes in agricultural management strategies to support early sowing of crops in areas that are likely to see early heat waves, or introducing improved yield varieties with shorter growth duration, are some policy changes that can alleviate heat stress on wheat,” he added. “There is no compromise that can be done on improving production, and that should be the central goal to the adaptation question.”

“Policymakers must take a multi-pronged approach, combining scientific research, financial support, technological solutions, and farmer education to protect wheat crops from rising heat stress,” according to Jha. “This includes promoting heat-resistant wheat varieties, adjusting sowing dates, financial support and crop insurance, and weather monitoring and advisories.”

**LIFE & SCIENCE****SPLASHDOWN AFTER NINE MONTHS: SUNITA WILLIAMS, BUTCH WILMORE ARE BACK**

NASA astronauts Butch Wilmore and Sunita Williams returned to Earth on Tuesday (March 18) after a nine-month-long stay at the International Space Station (ISS). The SpaceX Dragon capsule sent to bring them back to Earth splashed down off the Florida coast, also carrying NASA astronaut Nick Hague and Russian cosmonaut Aleksandr Gorbunov.

- On June 5, 2024, Wilmore and Williams set off on an eight-day test flight of the Boeing Starliner to the ISS. The goal was to test the Boeing spacecraft's capabilities and provide NASA with an alternative (apart from the Elon Musk-owned SpaceX) to carry astronauts into Space.
- However, the spacecraft almost immediately experienced problems with its thrusters and propulsion system. Safety concerns led to its return to Earth without a crew, and the two astronauts remained at the ISS for 286 days. A planned SpaceX mission for their return was also delayed.
- On February 11, 2025, NASA announced that Williams and Wilmore would return in a flight-tested Crew Dragon spacecraft on the Crew-10 mission with Hague and Gorbunov, instead of waiting for SpaceX to finish work on a new spacecraft for this purpose.
- Even though both NASA astronauts were stuck in space for nine months, the administration decided not to rush the mission but rather reassign the pair to SpaceX's Crew-9 mission, which arrived at the ISS last September. Crew-9's mission was reduced from four astronauts to two to make room for Williams and Wilmore. On Sunday morning, Crew-9 bid a heartfelt farewell to their ISS colleagues after the arrival of their replacements, Crew-10.

Do You Know:

- It is the method favoured by American spacecraft – such as NASA's Mercury, Gemini, and Apollo – to re-enter Earth. In a splashdown, the Space vehicle parachutes into an ocean or a large water body upon re-entering Earth. The low density and viscosity of water cushions the spacecraft against the impact of re-entry.
- One is the high speed at which the spacecraft is travelling. Landing in water results in a gentler impact compared to a terrestrial landing. Secondly, due to the friction experienced upon re-entry, the spacecraft may experience up to 3,500° F of extreme heat.
- There is also the matter of convenience. Landing in a large water body removes the need to identify a suitable area and eliminates the risk of landing in a populated region. Many American launch sites are located along the coastline, with Space launches made close to water bodies as well.
- In comparison, Russian cosmonauts do not splash down but descend on land, since their launch sites, such as the Baikonur Cosmodrome, are located inland.
- Water landings also reduce the complexity of spacecraft design.



NASA CLOSES OFFICES, LAYS OFF STAFF: HERE'S WHAT THIS MEANS

The National Aeronautics and Space Administration (NASA) has become the latest United States agency to face the brunt of the Donald Trump administration's obsession with finding and eliminating every government expenditure it considers excess or unnecessary.

- The world's leading space agency has announced it would be shutting down at least three departments to comply with President Trump's executive orders issued in January.
- The departments include the office of the chief scientist which is the topmost scientific advisory position in the agency.
- The other two departments facing the axe were the office of technology, policy and strategy, and some parts of the office of diversity and equal opportunity (ODEO) that deals with diversity and inclusion.
- The New York Times reported that about 20 positions in all were likely to be eliminated including that of the chief scientist. NASA has a workforce of about 18,000.
- The NASA decision has not touched the operational parts of the space programme as yet. However, some fear that this might just be the beginning of budget cuts that eventually would start to affect the missions as well.
- Currently, NASA seems to have gotten away lightly in comparison with some other government departments which have faced much heavier cuts. For example, only a few positions in ODEO have been axed. The department itself seems to have survived. Diversity, equity and inclusion (DEI) measures have been under special attack by the Trump administration, and all such programs across the federal government have already been defunded.

Do You Know:

- The most high-profile closure is that of the office of the chief scientist. The entire office has been shut down. The chief scientist worked as an advisor to the NASA chief, called the administrator, providing independent assessment and advice on all science-related matters. It was also NASA's public-facing branch on science. Current chief scientist Katherine Calvin, a climate scientist, was appointed to the position in 2022. The office also had a deputy chief scientist and at least five other senior officials.
- This is not the first time that the office of chief scientist has been discontinued. Created in 1982, this office has undergone closure or restructuring several times. It either did not exist or was not manned, during 1989 and 1993, for example, and then again between 1996 and 1999, and between 2005 and 2011.
- NASA is currently awaiting a new administrator, who has been appointed but not yet confirmed by the US Senate. The NASA administrator, the overall head of the agency, is a political appointment. A deputy administrator is also a political appointee. The highest-ranking NASA cadre employee is the associate administrator.



WHAT IS ELON MUSK'S STARLINK ALL ABOUT?

The story so far:

Bharti Airtel and Reliance Jio have signed distribution pacts with SpaceX Corp.'s Starlink service to bring satellite internet access to India. The distribution pacts are a reversal from the telecom industry's reluctance to quickly make the Starlink service available in India without auctions for the satellite airwaves.

What is Starlink?

Starlink is a low-earth orbit constellation of over 7,000 satellites that provide internet access to users with ground terminals, which the Elon Musk-owned SpaceX is already selling in around 40 countries. The satellites constantly orbit the earth, blanketing practically its entire habitable surface with coverage, as long as a given terminal on the ground has visibility to the sky.

The service offers speeds of around 100 megabits per second, comparable with many home broadband connections. However, the "latency," or the time it takes for a given data packet to travel between a user and terrestrial internet networks, is higher than wired broadband connections in offices and homes.

Satellites work in conjunction with ground stations on earth, which are physically connected to the internet like any other network and beam up connections wirelessly to satellites above them at any given point.

In India, Starlink may not be that useful in cities and towns with good 5G connectivity or wired broadband coverage, as local speeds and reliability will far exceed what a satellite link currently offers, even with technological advancements. However, in rural and remote areas where "terrestrial" networks have not penetrated deeply, Starlink can offer decent connectivity almost instantly.

How much does Starlink cost?

There are two costs associated with Starlink: the user terminal — essentially a router — required to access the satellite network and the monthly access fee to stay connected. At present, a residential kit in parts of the U.S. costs \$149, while a portable "roaming" kit costs \$349. Import duty, GST and social welfare surcharges applicable on satellite equipment may push up the hardware price by around 30%.

Without any introductory pricing on the hardware, the equipment may cost anywhere between ₹17,000 and ₹40,000, not including shipping costs from the U.S., where it is developed and manufactured.

Besides this, unlimited residential and roaming plans range from \$120-\$165 in the U.S. It is not a given that this price will be any lower in India, as the cost to provide Starlink service is, by nature of the technology, the same everywhere on earth. Notably, in Bhutan, where Starlink launched this year, it is priced at 4,200 to 8,400 ngultrum, which may be an indication of the Indian price as well. The Bhutanese currency is pegged to the rupee at parity.

A higher-priced plan for users on the move, called "mobile priority" is available at 21,000 ngultrum (or therefore rupees) per month and offers priority access in case of network congestion.



When will Starlink be available in India?

Starlink has faced several regulatory hurdles, the sharpest among them being the Indian government's heavy scrutiny of internet services in general and a technology that could provide access anywhere in the country in particular.

SpaceX needs to obtain a Global Mobile Personal Communications by Satellite (GMPCS) authorisation under the Telecommunications Act, 2023. While this authorisation existed in a different form under the Telegraph Act, 1885, the updated rules under the new Act have yet to be published, and it is unclear if the government will issue such an authorisation under the previous law's subordinate legislation, even though it remains technically in force.

As a part of this authorisation, SpaceX had to convince the Indian government to accept its contentions on revealing corporate ownership data, something it resisted on investor privacy grounds abroad. While reports suggest that this particular hurdle has been passed, the company still needs to obtain a security clearance from the Ministry of Home Affairs. It remains unclear if such a clearance has been obtained.

It is also uncertain whether the company's ground stations in India — where the Telecom Act requires tapping equipment installed onsite to give law enforcement authorities access to the network, a requirement that exists for other internet networks as well — are currently operational.

Finally, Starlink also needs to be allotted wireless spectrum through which it can offer its services. The government has indicated that like other countries, it will not auction this spectrum, as these are narrow beams that can be shared with other providers, unlike the signals emitted by telecom towers on the ground. Telcos have — before tying up with Starlink this year — demanded that this spectrum be auctioned, something that would be a global first. Reliance Jio has commissioned legal opinions that state that auction is the only way to allot satellite spectrum, due to the Supreme Court's 2012 judgment in the 2G scam case, where the top court held that all scarce natural resources must be allocated by auction.

It is unclear if these hurdles will be cleared on time. However, Mr. Musk's ascendancy in the U.S. government, along with trade pressure from President Donald Trump's administration, has boosted speculation that the government may facilitate Starlink's entry in short order.

Aside from Airtel and Jio's commercial distribution agreements, there have not been any official announcements on forward movement from a regulatory point of view.

INCREASING GREENHOUSE GAS EMISSIONS MAY THREATEN SATELLITES

Increasing levels of human-caused greenhouse gas emissions in the atmosphere may reduce the total number of satellites that can safely orbit Earth by up to 66% of the current carrying capacity by the end of the century, under a high-emissions scenario. The findings from the modelling study are described in Nature Sustainability.

Previous research has established that an increasing amount of greenhouse gases in the atmosphere can shrink Earth's upper atmosphere — consisting of the mesosphere (50-85 km) and thermosphere (85-600 km) — as incoming infrared radiation is reflected into space, resulting in a cooling and contracting effect. This contraction reduces the density of Earth's orbital space, lengthening the amount of time space debris remains in orbit as drag with the atmosphere is



reduced. As the number of satellites in Earth's orbit increases, persistent space debris poses a growing problem for the long-term use of Earth's orbital space.

Dr. William Parker from MIT Cambridge and colleagues used atmospheric modelling to estimate the number of satellites that can be sustainably maintained in Earth's orbit by 2100 under different emission scenarios. Using the greenhouse gas concentration in the year 2000 as a baseline, the authors found that the maximum number of satellites that can be sustainably managed in low Earth orbit will be 50-66% less by 2100, dependent on solar activity, under the highest-emission Shared Socio-economic Pathway (SSP5-8.5) scenario. This is equivalent to approximately 25-40 million satellites. They also estimated the ideal distribution of orbital objects and deviations from this ideal distribution observed under different emission scenarios. The authors show a large decrease in the rate of satellites deorbiting through friction with the atmosphere under the moderate to highest scenario carbon dioxide emission rates.

The authors suggest that mitigating greenhouse gas emissions is not only important for Earth's climate but also for preserving our access to and use of outer space.

PI DAY WAS ON MARCH 14. WHY IS IT CELEBRATED?

Mathematics enthusiasts around the world, from college students to rocket scientists, celebrate Pi Day, which is on March 14 every year. The date was chosen because it can be written 3/14 — the first three digits of an infinite number with many practical uses.

Simply put, pi is a mathematical constant that expresses the ratio of a circle's circumference to its diameter. It figures into numerous formulas used in physics, astronomy, engineering, and other fields, dating back thousands of years to ancient Egypt, Babylon, and China.

Pi Day itself dates to 1988, when physicist Larry Shaw began celebrations at a science museum in San Francisco. The holiday didn't really gain national recognition until, in 2009, the US Congress officially designated every March 14 to be the big day in the hopes of spurring more interest in math and science. Fittingly, the day is also Albert Einstein's birthday.

Pi is considered a constant number. It is also mathematically irrational. Long before computers, scientists such as Isaac Newton spent hours calculating decimal places by hand. The first algorithms that calculated pi up to record-setting lengths of several million digits were based on formulae published by Indian mathematician Srinivasa Ramanujan in 1914.

Today, using sophisticated computers, researchers have come up with trillions of digits for pi after the decimal point, but there is no end.

The number didn't get its name until 1706, when Welsh mathematician William Jones began using the Greek symbol for the number. It's the first Greek letter in the words "periphery" and "perimeter," and pi is the ratio of a circle's periphery, or circumference, to its diameter.

The number is key to accurately pointing an antenna towards a satellite. It helps figure out everything from the size of a massive cylinder needed in refinery equipment to the size of paper rolls used in printers.

Pi is also useful in determining the necessary scale of a tank that serves heating and air conditioning systems in buildings of various sizes.



Space agencies like ISRO use pi to calculate orbits, the positions of planets, elements of rocket propulsion, and spacecraft communication.

NASA holds its annual Pi Day Challenge online, offering games and puzzles, such as calculating the orbit of an asteroid or the distance a moon rover would need to travel each day to survey a certain area.

As for Einstein, possibly the world's best-known scientist, he was born on March 14, 1879, in Germany. The value of pi was used in many of his breakthrough theories, and now Pi Day gives the world another reason to celebrate his achievements.

The famed physicist Stephen Hawking also died on March 14, 2018, at age 76. And he once said, "One of the basic rules of the universe is that nothing is perfect. Perfection simply doesn't exist. Without imperfection, neither you nor I would exist."

Ironically, pi is the perfect example.

FINNS ARE HAPPIEST, AFGHANS UNHAPPIEST; INDIA UP 8 PLACES BUT BELOW PAK, CHINA

For the eighth consecutive year, Finland has been named the happiest country in the world, according to the World Happiness Report 2025, published Thursday by the Wellbeing Research Centre at the University of Oxford.

- Other Nordic nations—Denmark, Iceland, and Sweden—also retained their top positions, highlighting the strong social support systems and quality of life in these countries.
- The rankings are based on people's self-assessed life evaluations, compiled through surveys conducted by Gallup in partnership with the UN Sustainable Development Solutions Network.
- "Happiness isn't just about wealth or growth — it's about trust, connection and knowing people have your back," Jon Clifton, CEO of Gallup, said, according to AP. "If we want stronger communities and economies, we must invest in what truly matters: each other."
- India ranked 118th on the happiness index, while neighbouring Pakistan stood at 109th. Despite facing significant economic and social challenges, Pakistan's relatively higher ranking suggests a stronger sense of social support among its citizens, as per the report's analysis.
- While European nations dominated the top 20, some shifts were notable. Costa Rica (6th) and Mexico (10th) entered the top 10 for the first time.
- For the fourth consecutive year, Afghanistan (ranked 147th) remains the unhappiest nation in the world. Afghan women reported particularly harsh living conditions. Other countries at the bottom include Sierra Leone (146th), Lebanon (145th), Malawi (144th), and Zimbabwe (143rd), according to AP.

Do You Know:

- Researchers noted that beyond economic and health factors, simple lifestyle elements—like sharing meals, having a dependable support system, and household size—play a crucial role in overall happiness.



- For instance, in Mexico and Europe, a household size of four to five people is associated with the highest levels of happiness, the report found. The belief in kindness also emerged as a significant factor: societies where people expect lost wallets to be returned tend to report higher happiness levels.

- **Top 10 happiest countries in 2025:**

- Finland
- Denmark
- Iceland
- Sweden
- Netherlands
- Costa
- Norway
- Israel
- Luxembourg
- Mexico

Rica

- **Bottom five countries:**

- Zimbabwe (143)
- Malawi (144)
- Lebanon (145)
- Sierra Leone (146)
- Afghanistan (147)

SONIC WEAPON

Serbia's President Aleksandar Vucic has denied that his police forces used a banned 'sonic weapon' to disperse protesters in Belgrade.

- In a statement, he said, "I have had the opportunity to see this weapon abroad, and it emits a strong, piercing sound. That sound was not heard on the streets of Belgrade on Saturday (March 15) night."
- Serbia is currently witnessing mass protests against Vucic and his government over several issues, including allegations of widespread corruption and nepotism.
- According to some military experts, the authorities used a sonic weapon to produce a piercing noise to curb the protests. Under the country's police law, the use of such a weapon is illegal.

Do You Know:

- Acoustic or sonic weapons are devices that deliver very loud sounds over long distances. They can be designed to emit painful audible or inaudible sound waves. These devices can also be used to act like voice amplifiers to deliver voice messages or other sounds.



- Although sound amplifiers have been around for centuries, the use of this technology for crowd-control purposes goes back to the early 1990s. In 2004, the United States military for the first time used specialty devices that were able to project loud sounds over very long ranges in Iraq.
- Such weapons usually comprise hundreds of modern transducers — an electronic device that converts energy from one form to another — to create highly concentrated and amplified sound. “This fairly narrow beam can focus on specific targeted areas. The sound is designed to be controlled by police officers who can alter the frequency, level, quality, and duration of the alarm,” according to a report by Physicians for Human Rights (PHR), a US-based non-profit organisation.
- There are three main types of sonic weapons: —Long-range acoustic device (LRAD): The device is manufactured by US-based Genasys Inc, which was earlier known as the LRAD Corporation. It has a range of 8,900 metres for intelligible speech, and produces a highly directional “beam” of extremely loud sound which can go to up to 160 decibels (dB). For comparison, standing directly behind a jet engine as it takes off is between 130-140 dB, and a nearby gunshot produces around 150 dB. “Anything over 140 dB will cause pain for most people, but even sounds over 120 dB can cause permanent hearing damage from even short periods of exposure,” according to a report by The Conversation. —Mosquito: This device produces very high-pitched sounds that are audible and painful to only younger people — usually teenagers and those in their twenties. It does not affect older people (30 and above). James Parker, an expert in sound and law at the University of Melbourne in Australia, told CNN, “It’s not audible to adults because your hearing fades as you get older.” —Infrasonic weapon: This is a newer technology and could deliver very low-frequency sounds that would be inaudible but could cause pain and disorientation. Experts are still investigating its capabilities. Parker told CNN that infrasonic devices are likely to be the hardest to weaponise. “There are (sonic) devices that are used as weapons, but none that I know of use infrasound,” he said.

POCKETS OF INSULATED SOUND

Q. What are audible enclaves?

Audible enclaves are small pockets of sound that are not disturbed by surrounding noise. They are produced by new technologies designed to deliver sounds that only one specific person can hear, even if they are in a crowd.

Sound consists of waves moving through a medium, moving the medium’s particles back and forth. How fast this back-and-forth motion happens determines the sound’s frequency. The faster they move, the higher the frequency of the sound.

When sound waves are emitted from a source, like a speaker, they diverge as they pass through the air in a phenomenon called diffraction. Higher frequency sounds diverge more. Devices called parametric array loudspeakers are still able to create focused ‘beams’ of sound. They emit high-frequency waves modulated with an audio signal. As the waves travel through the air, they self-demodulate to produce a sound wave confined in a narrow beam, audible only to those in the beam’s path.

Audible enclaves go a step further. In a study published on March 17 in Proceedings of the National Academy of Science, researchers in the US reported doing this by using two high-frequency waves of different frequencies. They are inaudible in this form. But when they intersect, non-linear interactions cause them to produce a sound wave at that spot, audible only to people nearby.



BIREFRINGENCE: DIFFERENT IN DIFFERENT DIRECTIONS

WHAT IS IT?

When light passes through a glass prism from air, its path bends due to a property of the glass called refraction. The amount of bending depends on the material's refractive index. It is calculated as the ratio of the speed of light in vacuum to the speed of light in the material.

For example, the refractive index of vacuum is 1, of air is 1.0003, of glass is roughly 1.5, and of diamond is 2.4.

Some materials have more than one refractive index; that is, they slow the passage of light to a different degree in two different directions. Such materials are said to be birefringent. They occur naturally as well as can be engineered in the lab. Examples of naturally birefringent materials include mica and quartz; those of synthetic ones include barium borate and lithium niobate.

Certain materials' birefringence can also be induced or modified by physically stressing them or exposing them to electric or magnetic fields.

Birefringence arises because the material has different crystal structures in different directions, i.e. are anisotropic. Which ray of light is bent in which direction depends on the direction in which it is moving and how it is polarised. Light consists of an electric field oscillating perpendicular to a magnetic field, and both of them perpendicular to the light's direction of motion. Polarisation refers to the direction of the electric field.

WITH CIVILISATION, CAME BUREAUCRACY AND RED TAPE

One may imagine the endless forms and serpentine queues outside government offices to be modern-day afflictions. But, as it turns out, their roots go back more than 4,000 years — to the ancient Sumerians. The cradle of civilisation didn't just come up with the wheel, writing, and the first empire in history — it also gave the world its first red tape. Archaeologists from the British Museum and Iraq have recently unearthed hundreds of administrative tablets from the ancient city of Girsu (modern-day Tello in Iraq), revealing that the temple state was obsessed with bureaucracy.

The Akkadian empire lasted from 2300 to 2150 BC and, under its first ruler Sargon, it began developing a meticulous administrative system, whose purpose seems to have been to ensure that nothing slipped through the cracks. From the weight of a fattened cow or a 30-litre barrel of beer to inventories of grain or expenses on items as vastly different as gemstones and fish, from records of personnel to the nature of their employment, everything was recorded in cuneiform script on stone tablets. These became part of the state archive, passed down as templates for governance. The ruling class's fascination with bureaucracy has historical antecedents in other civilisations too. In ancient Egypt, the pharaohs had entire departments dedicated to tallying bricks, measuring stone blocks, and recording the hours worked by each labourer. Meanwhile, under the Zhou dynasty (1046-256 BC), the imperial court in China had a dizzying array of officials whose job was to codify and standardise nearly every aspect of life. By the time the Han Dynasty (206 BC-220 AD) rolled in, the Chinese had mastered even the art of civil service examinations — among its many requirements was the ability to recite vast swathes of Confucian texts.

Of course, little of the tangled web of rules made for an enviable experience for those at the receiving end of the scrutiny. The Sumerian tablets elsewhere, for instance, show complaints



against a particularly inefficient but influential member of a merchants' guild. The conveniences of the digital era notwithstanding, not much has changed: Bureaucracy's ability to test one's patience remains timeless.

HOW 'MICROLIGHTNING' IN WATER DROPLETS MAY HAVE SPARKED LIFE

How life began on Earth has been a long-standing mystery, but according to a study the process could have been kicked off simply with crashing waterfalls and breaking waves that would have thrown up mists of water.

- The findings add another angle to the much-disputed Miller-Urey hypothesis, which argues that life on the planet emerged from a lightning strike. They were described in the study, 'Spraying of water microdroplets forms luminescence and causes chemical reactions in surrounding gas', which was published in the journal Science Advances last week.
- According to the researchers, the findings showed that it was not necessarily that lightning strikes may have kick-started life on Earth. Tiny sparks due to crashing waves or waterfalls may have done the job.
- "On early Earth, there were water sprays all over the place – into crevices or against rocks, and they can accumulate and create this chemical reaction... I think this overcomes many of the problems people have with the Miller-Urey hypothesis," said Zare in a statement.

Do You Know:

- The Earth formed around 4.6 billion years ago. For a few billion years afterwards, it had a rich mixture of chemicals but almost no organic molecules with carbon-nitrogen bonds. These bonds are crucial for proteins, enzymes, nucleic acids, chlorophyll, and other compounds that makeup living beings today.
- In 1952, American chemist Stanley Miller and physicist Harold Urey performed an experiment in which they successfully demonstrated that the organic compounds (such as amino acids) needed for life could form with the application of electricity to a mixture of water and inorganic gases. Put simply, the two scientists showed that a lightning bolt struck the ocean, triggering chemical interaction with gases such as methane, ammonia, and hydrogen that created organic molecules.
- The experiment was considered a landmark at the time as it gave one of the possible explanations for how life could have found its first foothold on Earth. However, in the following years, many scientists raised doubts about the experiment, saying "real lightning would have struck infrequently — and mostly in open ocean, where organic compounds would have quickly dispersed," according to a report by Scientific American.
- According to the new study, water spray is sufficient to generate organic compounds without the requirement of external electricity. Stanford University chemist Richard Zare, who led the analysis, told Scientific American, "Unlike lightning... water sprays are everywhere".
- Zare and his team showed that when water droplets divide, they develop opposing charges. While larger droplets have positive charges, smaller ones carry negative ones. When these oppositely charged droplets move close together, tiny sparks leap between them. This process, called "microlightning" by the researchers, imitates how lightning forms in clouds. As a result,



when Zare and his team sprayed water into a mixture of nitrogen, methane, carbon dioxide and ammonia, it led to the formation of organic compounds, including hydrogen cyanide, glycine, and uracil.

WHY SCIENTISTS WERE SURPRISED TO FIND LIFE UNDER ANTARCTIC ICE SHELF

A team of scientists may have discovered dozens of new species, including giant sea spiders, octopi, and corals on the newly exposed seafloor left behind by the enormous A-84 iceberg that broke away from the George VI Ice Shelf on January 13.

— The break-away of the 510-sq-km iceberg — around two-and-a-half times the size of Kolkata — gave access to an underwater world that was previously beyond human reach. A remotely-operated submersible got to the seafloor on January 25, where it captured photos and videos, and collected specimens.

— The mission was part of Challenger 150, a UNESCO-endorsed global initiative for deep-sea research.

— Their observations include large corals and sponges supporting an array of animal life such as icefish, giant sea spiders, and octopi. They also found a giant phantom jelly, a species of jellyfish that can grow up to a metre wide, and a vase-shaped sponge that might be hundreds of years old.

— The reason scientists were surprised to find diverse ecosystems under the ice shelf is that deep-sea communities typically depend on photosynthesising organisms to rain down nutrients from the surface to the seafloor.

Do You Know:

Here are some of the most mind-blowing new animal species discovered in 2024:

1. Vampire Hedgehog (*Hylomys macarong*)

What It Is: A soft-furred hedgehog species with fang-like teeth

Where: Greater Mekong region

Why It's Cool: Its distinctive fangs earned it the "vampire" moniker, making it one of the year's most intriguing finds

2. 'Starry Night' Gecko (*Cnemaspis vangoghi*)

What It Is: A tiny lizard with colouration reminiscent of Vincent van Gogh's "The Starry Night"

Where: South Western Ghats, India

Why It's Cool: Its unique patterns are so artistic that Pensoft, the journal publisher, ranked it as the No. 1 new species of 2024

TREATING CHIKUNGUNYA USING HIV/AIDS DRUG EFAVIRENZ

A preliminary study has found that efavirenz— an non-nucleoside inhibitor of HIV virus that is used for treating HIV/AIDS— can be repurposed for the treatment of chikungunya. Currently, no

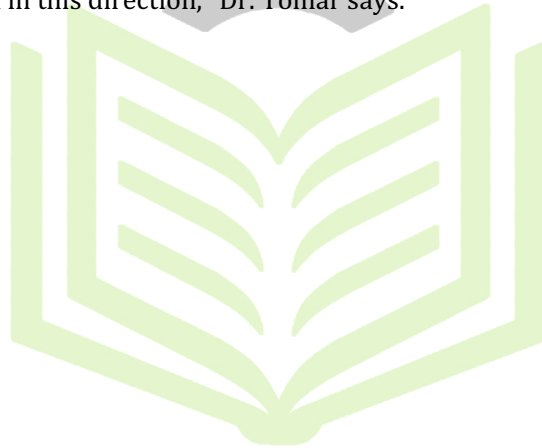


antiviral compound has been approved for treating chikungunya and only a limited number of novel compounds have been tested against the virus in animal models.

Chikungunya reappeared in India in 2006 after a long gap of 20-30 years. In 2006, chikungunya virus was clinically suspected in nearly 14 million people and was laboratory-confirmed in 2,001 cases. Since 2006, chikungunya cases have been reported from various parts of India but gradually declined until 2014. Chikungunya cases have been reported in a large number of people since 2018.

The paper cites a 43-year-old HIV positive person infected with chikungunya virus and who was being treated with antiretroviral drugs, including efavirenz, displaying improved condition. Though the improvement with respect to chikungunya infection cannot be completely attributed to efavirenz as he was treated with other drugs, the findings nevertheless are in line with the anti-chikungunya virus activity observed in the current study.

"Based on good pharmacokinetics properties, previous successful applications of efavirenz to treat HIV infection, and the demonstrated anti-chikungunya activity in this study, efavirenz shows high potential for repurposing against human chikungunya infections and further clinical human trials can be conducted in this direction," Dr. Tomar says.



DreamIAS