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INTERNATIONAL

TRUMP LIKELY TO SIGN ORDER DESIGNATING ENGLISH AS THE OFFICIAL LANGUAGE OF U.S.

U.S. President Donald Trump is expected to sign an executive order designating English as the official language of the country, according to the White House.

The order will allow government agencies and organisations that receive federal funding to choose whether to continue to offer documents and services in language other than English, according to a fact sheet about the impending order.

Mr. Trump had been expected to sign the order on Friday.

But by Friday night, the White House had not announced the order had been signed and did not immediately respond to a message seeking comment.

The executive order will rescind a mandate from former President Bill Clinton that required the government and organisations that received federal funding to provide language assistance to non-English speakers.

'Promoting unity'

Designating English as the national language "promotes unity, establishes efficiency in government operations, and creates a pathway for civic engagement," according to the White House.

Within hours of Mr. Trump's inauguration last month, the new administration took down the Spanish language version of the official White House website.

WAR AND PEACE

The dramatic showdown in the White House between U.S. President Donald Trump and his Ukrainian counterpart Volodymyr Zelenskyy, in full view of television cameras, was unprecedented in the history of modern diplomacy. For Mr. Zelenskyy, who was to sign an agreement on minerals and discuss Mr. Trump's peace plan, the visit was both humiliating and disastrous. Humiliating because Mr. Zelenskyy's apparent questioning of U.S. Vice President J.D. Vance's push for diplomacy triggered a spiralling spat, prompting Mr. Trump to say that Ukraine was not winning the war and that Mr. Zelenskyy was being ungrateful to the U.S. It was disastrous because Mr. Trump asked Mr. Zelenskyy to take the deal he was negotiating with the Russians or "we are out". This was a threat that the U.S. would stop supplying weapons to Kyiv, which is struggling to slow down an advancing Russia. Mr. Trump's snub that Mr. Zelenskyy had "disrespected America in its cherished Oval Office" and that "he can come back when he is ready for peace", marked a breakdown in his relationship with the Ukrainians. This, unless reversed, could prove costly for Ukraine at a time when it needs the support of all its allies.

The tragedy of Ukraine is that it became a pawn in the great game between a powerful Russia and the U.S.-dominated North Atlantic Treaty Organization (NATO), the bloc Kyiv wanted to join. When Joe Biden was the U.S. President, he promised to support Ukraine "as long as it takes". The weapons and training that the U.S. and Europe have provided to Ukraine helped it mount an effective resistance. But the problem has been that even with that support, Ukraine does not have

a path towards victory. And the return of Mr. Trump, who promised to shut down the war through a reset with Russia, has meant the end of the 'as-long-as-it-takes' policy. Mr. Trump seems determined to make a deal with Russia, while Ukraine wants security guarantees, which Washington is reluctant to provide. This is the main reason for the rift. After the Oval Office spat, Mr. Zelenskyy was welcomed in London by U.K. Prime Minister Keir Starmer, who said Europe must "do heavy lifting". But he also emphasised that for any European plan to succeed, it "must have strong U.S. backing". So it is important for Ukraine and Europe to work with the Trump administration in negotiations with Russia. And if America, which until two months ago was Ukraine's greatest supporter, abandons Kyiv, it would only hurt its reputation as a global power. The U.S. should make sure that Ukraine's security concerns are adequately addressed in any final agreement with Russia, and aimed at ending the war and bringing lasting peace in Europe.

A BRIEF HISTORY OF THE RUSSIA-UKRAINE WAR

The story so far:

The Ukraine conflict has witnessed dramatic developments in recent weeks. U.S. President Donald Trump has brought in a 180-degree shift in U.S's policy towards the war. Disagreements between Kyiv and Washington on how to end the war have led to an unprecedented public spat between Ukraine's President Volodymyr Zelenskyy and Mr. Trump in the Oval Office, following which the U.S. paused all military aid for the war-torn European nation. Within a day, Mr. Zelenskyy 'regretted' the spat, announced Kyiv's readiness to declare a partial truce and work with Mr. Trump to achieve lasting peace. Europe seems caught off guard as the geopolitical glacial plates are shifting fast. Russia is watching and waiting, while the war grinds on.

How did the war begin?

When Russian President Vladimir Putin launched the invasion of Ukraine on February 24, 2022, he probably thought the war would be over within days. So did Ukraine's western partners, including the U.S., who vacated their embassies in Kyiv right before the war began. But when Ukraine, armed with U.S.-supplied weapons, denied a quick victory to the Russians, the West stepped in. The U.S., under the Biden administration, adopted a two-pronged approach towards the war — impose biting sanctions on Russia to weaken its war machinery and economy, and arm Ukraine to the teeth to fight the Russians on the battlefield. "We want to see Russia weakened," Mr. Biden's Defence Secretary Lloyd Austin said in April 2022. This approach was relatively successful in the war's initial phase. By September 2022, Russian troops were forced to withdraw from the settlements they had captured in the Kharkiv Oblast in the northeast. In November, Russia pulled back forces from Kherson city and parts of Mykolaiv on the right bank of the Dnipro River in the south.

But in between Russia's retreats from Kharkiv and Kherson, President Vladimir Putin had doubled down on the war: he annexed four Ukrainian oblasts — Donetsk, Luhansk, Zaporizhzhia and Kherson — and announced a partial mobilisation. The message from the Kremlin was that it was ready to fight a long war. On the economy front, Mr. Putin pivoted towards Asia where the huge markets of China, India and others helped Moscow offset the impact of the sanctions.

Where does the war stand today?

In 2023, Russia gradually turned the tide of the war, inch by bloody inch. It took Soledar in January and Bakhmut in May, after a months-long campaign. In 2024, Russia expedited its battlefield

advances by capturing Avdiivka in February, Krasnohorivka in September and Vuhledar in October. At no point since 2023, had Ukraine seemed capable of defeating the Russians and recapturing the lost territories. In June 2023, Ukraine launched a much-awaited counteroffensive, with advanced western weapons, in the south, but it fizzled out in the face of Russia's dogged defence.

In August 2024, Ukraine captured some 1,000 sq. km of Russian territory in the Kursk region in a surprise attack aimed at mounting pressure on Russia's advancing troops in the east. But Russia refused to walk into the trap and pressed ahead with its offensive in the east, the soft belly of Ukraine's resistance. In 2024, Russian forces captured an estimated 4,168 sq. km in both Ukraine and Russia's Kursk. In January 2025, Russian troops seized Velyka Novosilka and parts of Toretsk. They have also been trying to encircle Pokrovsk. Ukraine in recent months stepped up drone and missile attacks deep inside Russian territory as well as in the Black Sea, hurting Russia's security. But on the battlefield, it has been on the backfoot for over two years.

Why has Trump changed America's Ukraine policy?

Mr. Trump had promised during his election campaign that he would bring the war to a quick end. After taking office in January, he moved fast. First, Pete Hegseth, the U.S. Defence Secretary, told the Ukraine Defence Contact Group, an alliance of 57 countries and the EU put in place by the Biden administration to help Kyiv, that Ukraine would not become a NATO member. He also ruled out American security guarantees for Ukraine and said any European guarantee would not be covered under NATO's collective security clause. Immediately after Mr. Hegseth's comments, Mr. Trump held a telephone call with Mr. Putin. Within days, Russia and the U.S. had two rounds of direct talks. Mr. Trump seems determined to reset America's ties with Russia.

One explanation for this approach is that the U.S. doesn't see Russia as a threat any more. The U.S., in that sense, is breaking with the post-Second World War trans-Atlantic consensus, and is going back to the pre-First World War offshore balancing (the U.S. is protected by the world's two greatest oceans and shares borders with two meek powers in the south and north). In this Realist worldview, China is the systemic threat to the U.S's primacy and a Sino-Russian alliance could make that threat perilous. It would entail a reorientation of America's policy towards Russia — in a reverse order of what Henry Kissinger did in the 1970s when he and President Richard Nixon exploited the Sino-Soviet split and reached out to Beijing. In this grand reset plan, Ukraine is just a hindrance. Mr. Trump believes Ukraine can't win the war even with American support, and wants Kyiv to take the deal the U.S. plans to make with Russia and end the war.

How does Europe look at the developments?

Europe seems to be struggling to come to terms with what's happening. When Ukraine was promised NATO membership by U.S. President George W. Bush in 2008, Germany and France were hesitant. After Russia annexed Crimea in 2014 and supported a rebellion in Ukraine's east, Germany and France played a role in negotiating the Minsk process to bring peace to Ukraine. But the U.S. was not very keen on the Minsk accords, and continued to back Ukraine militarily. No side — Kyiv, the separatists in the east, and Russia — implemented the accords. The crisis escalated into a full-blown war on Europe's watch. After the war began, Europe had to pay a huge economic cost. The Nord Stream pipeline, linking Russia across the Baltic Sea to Germany, was blown away (most likely by the Ukrainians, according to American media). The stoppage of the flow of cheap Russian gas triggered a cost-of-living crisis and de-industrialisation, which deepened public

antipathy towards Europe's political establishment in several countries. For example, Germany is in recession for the third consecutive year, and the German far-right is ascendant.

And now, the U.S., which was in the lead of the pro-Ukraine alliance, is breaking with the policy and directly talking to Russia, excluding both Ukraine and Europe. European countries have called two summit-level meetings since Mr. Trump came to office, and promised to do more to help Ukraine. But the question is whether Europe, which itself is divided, has the capacity to provide security guarantees to Ukraine without America's backing. At present, Europe doesn't have many options but to go with the American plan. Europe also has bigger problems than Ukraine. It is worried about the future of NATO as the Trump administration is reorienting America's post-War foreign and security policy.

Where does it leave Ukraine?

Ukraine has lost more than 20% of its territories to Russia and tens of thousands of soldiers were killed in the war. Millions of Ukrainians have fled the country. Its economy is in shambles, and the energy sector is facing a major crisis because of Russia's repeated bombing of its infrastructure. The country is dependent on external supplies to meet at least half of its weapons requirements — including artillery and ammunition. Ukraine is also facing a manpower crunch on the battlefield (Mr. Trump says Ukraine is "running low on soldiers", while Vice President J.D. Vance says Russia has a "huge numerical advantage").

The country is therefore in dire straits. The U.S. says it's not practical to expect Ukraine to retake its lost territories — the Ukrainians and Europeans would grudgingly agree. The U.S. promised NATO membership to Ukraine in 2008. In 2025, the U.S. says Ukraine can forget about NATO membership. Ukraine wants at least security guarantees, but America is reluctant to provide any such guarantee. So, if Ukraine continues the war, it could lose more territories. If it stops the war, it will have to do so on the terms set by Russia and America. In the outset, no good options left for Mr. Zelenskyy and his Generals. Great powers fight proxy wars when their interests clash. Great powers reset ties when their interests align. The pawns and proxies suffer. Ukraine's story is not different.

CALLS GROW TO REVIVE CONSCRIPTION IN GERMANY AMID NATO CONCERNS

Germany's conservatives, who are set to lead the next government, on Tuesday argued that the country should quickly reintroduce compulsory military service. Friedrich Merz, head of the CDU/CSU bloc that topped last month's election, has argued that in the era of U.S. President Donald Trump, Europe will have to better handle its own security. The defence policy spokesperson of his centre-right alliance, Florian Hahn, told Bild daily that Germany's "suspension of conscription no longer fits the current threat situation". Fears about the future strength of the NATO military alliance have surged in Europe, not least after Mr. Trump recently sided repeatedly with long-isolated Russia against Ukraine, upending the Western consensus of recent years. Mr. Merz has vowed to break with many policies of former CDU Chancellor Angela Merkel, including on migration, but also on her 2011 decision to suspend compulsory military service.

THE EGYPTIAN ALTERNATIVE TO TRUMP'S GAZA 'RIVIERA' PLAN

On March 4, an Emergency Summit of the Arab League adopted a $53-billion Egyptian plan for the reconstruction of Gaza as a "comprehensive Arab strategy".

• The Summit was held in Cairo a day after Israel cut off all humanitarian aid to the devastated Palestinian enclave at the end of the first phase of the Israel-Hamas Agreement.

• The Cairo Declaration is the first collective Arab proposal for Gaza's "day after", contingent on the "full implementation of the ceasefire agreement…especially by Israel".

• It is also the first plan for the reconstruction of Gaza presented since United States President Donald Trump's proposal last month that the Palestinians should be permanently evicted from the enclave, which America should then "own" and turn into a "Riviera".

• The Cairo Declaration follows the Bahrain Declaration from the last Arab League Summit in Manama in May 2024.

• It calls for "a Gaza administration committee" comprising "qualified Gazans, for a transitional period", pledges a "trust fund" for recovery-and-reconstruction projects, and commits financial, political, and material support for the Egypt-led reconstruction plan based on studies by the World Bank and the UN Development Fund.

Do You Know:

• The Cairo Declaration does not mention Hamas or the need to remove it, arguably leaving some room for the group to continue in the interim. Both Israel and the US criticised the Summit's outcomes — the lack of mention of Hamas is among the reasons why.

• The Declaration sees the proposed interim administration as a preparatory body until the Palestinian Authority (PA) can take over — to bring back unified governance of Gaza and the West Bank — and eventually hold legislative and presidential elections. Israel has consistently rejected such a role for the PA over the last 17 months.

• Hamas has welcomed the Declaration and the reconstruction plan, arguably because of the commitment to hold fresh elections. The last elections, held in 2006, returned a Hamas majority — and a rejection of the result by Mahmoud Abbas's Fatah led to its violent ejection from Gaza.

• The Cairo Declaration categorically rejects the "ethnic cleansing" of Palestinians and recognizes the "crucial role of Jordan and Egypt in confronting displacement and the liquidation of the Palestinian cause" — directly countering Trump's demand that Egypt and Jordan should absorb 2.3 million displaced Gazans.

• It also doubles down on the Arab demand for Israel's "complete withdrawal from the Strip, including the Philadelphi Corridor". Such a withdrawal remains the litmus test for whether the ceasefire can hold and usher in the "day-after" in Gaza.

WHAT IS THE CURRENT STATUS OF U.S.-TAIWAN RELATIONS?

The recent February 16 update of the U.S. State Department factsheet on Taiwan calls for a revisit of U.S.-Taiwan relations. The factsheet now does not assert that "we do not support Taiwan independence" and states that the U.S. will support "Taiwan's membership in international organisations where applicable". The deletion was termed a routine update by Washington and was welcomed by Taiwan. However, it did receive strong opposition from Beijing. As per China's Foreign Ministry, "The US State Department's revision of the list of facts regarding US-Taiwan relations represents a serious regression in its stance on Taiwan…(and) sends a seriously erroneous message to the separatist forces advocating for Taiwan independence". The driver of

U.S. Taiwan policy is the Taiwan Relations Act (TRA), 1979, which, "Declares it to be the policy of the United States to preserve and promote extensive, close, and friendly commercial, cultural, and other relations between the people of the United States and the people on Taiwan....and to provide Taiwan with arms of a defensive character". This policy underscores the regular arms sales from the U.S. to Taiwan which has received ire from Beijing.

Trump on Taiwan

U.S. President Donald Trump has proven himself to be unpredictable, and talks of tariffs have made U.S.-China relations challenging. However, U.S.-Taiwan relations are also getting complicated.

Mr. Trump during his campaign had hinted that he believes that Taiwan has stolen the chip industry from the U.S. He has also asserted that he is keen that Taiwan should pay the U.S. for protection, and that Taiwan should increase its defence budget. Taiwan today is in the process of negotiating a U.S. arms deal of 7-10 billion dollars. It has also increased its defence budget to 2.5% of its GDP. Taiwanese President Lai Ching-te has announced that he will be communicating more with Mr. Trump and will also be looking for increasing investments in the U.S. The Taiwan Semiconductor Manufacturing Company (TSMC) has announced that it is planning to invest around $100 billion in developing manufacturing in the U.S., raising its investments to around $165 billion. Mr. Trump has also made statements to the effect of hinting at Taiwan being too far away for the U.S. to be of any help should Beijing adopt a military route. However, the fact remains that Mr. Trump's last administration had approved arms deal worth $10 billion and sold arms worth $18 billion to Taiwan. He also signed laws which improved U.S.-Taiwan relations such as the Taipei Act, Taiwan Travel Act and Taiwan Assurance Act.

Taiwan's vulnerable position

There has been a consistent rise in Chinese aggression in the form of military exercises across the Taiwan strait. Chinese President Xi Jinping has also been building a global narrative in the hope to further isolate Taiwan. Beijing has had a tough relationship with the pro-independence Democratic Progressive Party's (DPP) government since 2016. During the last three terms of the DPP, Taiwan lost diplomatic allies to Beijing. Today only 12 countries have diplomatic relations with Taipei. The 2024 elections happened under excessive military exercises by China across the Taiwan Strait. Along with regular military drills, Beijing has also resorted to using spy balloons and cyber-attacks. These tactics have been an attempt to keep the threat of military invasion real.

A conflictual relationship between the U.S. and China can raise existential challenges for Taiwan. For Mr. Xi, it is about national rejuvenation, while for Washington, Taiwan matters as a chip hub and as a market for U.S. weapons.

IRAN FLOGS SINGER OF ANTI-HIJAB SONG FOR ALCOHOL POSSESSION

Iranian authorities have flogged popular singer Mehdi Yarrahi over an alcohol-related conviction, his lawyer and officials confirmed. Mr. Yarrahi, who previously released a song urging women to remove their hijabs, received the punishment on Wednesday, lawyer Zahra Minuei wrote on X.

Iran's semi-official Fars news agency, citing an anonymous official, said the sentence was for possessing and consuming alcohol, not for the political nature of his music.

The lashes were "fully carried out in Branch 4 of the Enforcement of Sentences Office at the Tehran Morality Security Prosecutor's Office, and Mr. Mehdi Yarrahi's case has been closed," Mr. Minuei said.

Mr. Yarrahi gained attention for his song Roosarito, Farsi for "Your Headscarf", which featured unveiled women dancing. The music video urged women to remove their hijabs and featured uncovered women dancing.

Following the flogging, Mr. Yarrahi wrote on X: "He who is not willing to pay a price for freedom is not worthy of it."

Despite government crackdowns, more Iranian women continue to defy mandatory hijab laws, especially after the second anniversary of Mahsa Amini's death in September, 2022. Amini, 22, died after being arrested by morality police for allegedly violating hijab rules.

Meanwhile, videos showed uncovered women attending the 12th Iran Interior Design Award ceremony, as well as men and women shaking hands. The judiciary's Mizan news agency reported that prosecutors had announced legal action.

AS GREENLAND IS SET TO VOTE, DENMARK WANTS STATUS QUO, U.S. SEEKS TO UPEND IT

Greenland will vote on March 11 in a general election just a week after U.S. President Donald Trump reiterated his interest in the Arctic island, inviting its people to join the United States but taking a more conciliatory tone than in previous comments.

A movement in Greenland for independence from Denmark, which began in the 1970s, has gained momentum in recent months. A win for political parties that favour quick independence could pave the way for more U.S. influence.

Relations between Greenland and Denmark have been strained after revelations of historical mistreatment of Greenlanders under colonial rule.

Trump's interest

However, Mr. Trump's interest in making the island part of the United States has prompted Denmark to accelerate work to improve its ties with Greenland. Opinion polls show that a majority of Greenland's inhabitants support independence, but they are divided over the timing and potential impact on living standards.

Mr. Trump's interest has shaken the status quo in Greenland and, combined with the growing Inuit pride, has led some of the island's 57,000 residents to view this month's election as a historic chance to free Greenland from Danish influence.

However, many Greenlanders warn against acting rashly — fearing Greenland could become worse off and expose itself to the U.S. if it too quickly seeks independence from Denmark. Since 2019, politicians on the island have repeatedly said they are interested in strengthening cooperation and trade with the United States. However, Greenland Prime Minister Mute Egede, who has stepped up a push for independence, has stressed the island is not for sale and that only its people should decide their future.

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Greenland's strategic location and resources could benefit the U.S. It lies along the shortest route from Europe to North America, vital for the U.S. ballistic missile warning system.

The U.S. has expressed interest in expanding its existing military presence on the island, including placing radars there to monitor the waters between the island, Iceland and Britain, which are a gateway for Russian navy vessels and nuclear submarines. The island, whose capital Nuuk is closer to New York than the Danish capital Copenhagen, boasts mineral, oil and natural gas wealth, but development has been slow.

Asked for comment, a White House official said on Thursday: "Greenland has ample supply of rare earth minerals that will power the next generation of America's economy."

So far, though, Greenland's economy has remained reliant on fishing, which accounts for over 95% of exports, and annual subsidies from Denmark, which cover roughly half of the public budget.

In total, Denmark spends just under $1 billion each year on Greenland, or $17,500 for each inhabitant.

Current U.S. presence

The U.S. military maintains a permanent presence at the Pituffik air base in Greenland's northwest.

A 1951 agreement between the United States and Denmark established a U.S. right to move around freely and construct military bases in Greenland as long as Denmark and Greenland are notified.

Historically, Denmark has accommodated the U.S. because Copenhagen does not have the capability to defend Greenland, and because of U.S. security guarantees to Denmark through NATO, according to Kristian Soeby Kristensen, senior researcher at Copenhagen University's Centre for Military Studies.

Greenland's mining sector has seen very limited U.S. investment. The mining companies operating in Greenland are mostly Australian, Canadian or British.

The island, a former colony of Denmark, became a formal territory of the Nordic kingdom in 1953 and is subject to the Danish constitution.

In 2009, the island was granted broad self-governing autonomy, including the right to declare independence from Denmark through a referendum.

Under the 2009 law, Greenland's Parliament, Inatsisartut, can invoke a provision that would have Denmark and Greenland begin negotiations about achieving full independence.

The people of Greenland would need to endorse independence through a referendum, and an independence agreement between Denmark and Greenland would also require consent from the Danish parliament.

According to Ulrik Pram Gad, an expert on Greenland, the idea of buying Greenland is based on a misunderstanding of international law and the principle of self-determination, which gives people the right to choose their own political status. Trump has declined to rule out the use of military or economic means to gain control of Greenland. Vice President JD Vance, speaking to Fox News, has dismissed the use of military force.

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If Greenland became independent, it could choose to become associated with the U.S. without becoming U.S. territory.

The island could form a so-called "free association" with the United States that would replace Danish subsidies with U.S. support and protection in return for military rights.

While there is a push in Greenland to be independent from Denmark, Greenlanders are not interested in a new colonial master, opinion polls show.

Greenlanders, who enjoy a Nordic-style welfare model including universal healthcare and free education, would likely want to make sure they don't become worse off economically before holding an independence referendum, according a researcher.

MANDARIN'S ENTRY INTO SAUDI ARABIAN SCHOOLS HIGHLIGHTS GROWING CHINA TIES

In an effort to diversify its economy and international alliances, Saudi Arabia has introduced Mandarin as a compulsory second foreign language in schools across six regions. This move is part of a broader strategy to strengthen ties with China, a major economic partner and significant market for Saudi oil. Thousands of Chinese nationals work in Saudi Arabia, and the country has seen a growing presence of the Chinese language in public spaces. This initiative reflects Saudi Arabia's alignment with the shifting global order and China's rising influence as a global economic powerhouse.

INDONESIANS SWINDLED USING DEEPFAKES OF PRESIDENT PRABOWO

Wearing a traditional Indonesian black hat and shirt, President Prabowo Subianto speaks to the camera in an Instagram video, asking his people how he can help them after his election last year.

"Who has not received aid from me? What are your needs right now?" Mr. Prabowo appears to ask viewers in the clip posted in November.

But while the Indonesian leader's mouth moves and his eyes blink, the words he utters are part of a fraudulent deepfake scam uncovered by police last month that has swindled Indonesians across 20 provinces.

Those ensnared by the message were asked to contact a WhatsApp number and hand over between 2,50,000 and one million rupiah ($15-$60) as an "administrative fee" to get aid that never materialised.

Since last year's Indonesian election, experts have warned of a tidal wave of deepfakes — audio, images, and video appearing to come from a known person but which are in fact the work of scammers using artificial intelligence tools.

And victims say the hoaxes are so sophisticated they leave others vulnerable to being conned too.

BANGLADESH'S PROTESTING STUDENTS HAVE A PARTY. THEIR CHALLENGE BEGINS

Following the Liberation War in 1971, a secular nation-state based on linguistic nationalism was established in Bangladesh. It was, in many ways, a rejection of the religious nationalism that continues to define Pakistan. Since its inception, however, Bangladesh has navigated a dual identity where Bengali linguistic nationalism has coexisted, often uneasily, with the influence of

orthodox Islam in its political culture. Since Sheikh Hasina's ouster in August 2024, the latter has been regaining prominence. A stark example of this was visible in an incident in January when a women's football match was cancelled after students from a religious school vandalised the venue. Earlier, in November, a mystic sect promoting religious inclusivity had to cancel their music festival after Islamist threats. Post-Hasina, emboldened Islamist groups have been returning to the mainstream after facing crackdowns for years. Against this backdrop and ahead of the elections expected to take place this year, the student-led movement that spearheaded the protests that led to Hasina's downfall has launched the Jatiya Nagorik Party or the National Citizens' Party (NCP).

The NCP's promise of a "second republic" reflects a determination to reshape Bangladesh's political framework. The immediate challenge for the country is safeguarding its democratic credentials, which hinge on free and fair elections. Hasina's Awami League has been isolated. However, the support that the interim government initially enjoyed has also begun to fade, as Muhammad Yunus now faces pressure to deliver tangible results. Since Hasina's ouster, Bangladesh has been gripped by political turbulence and economic hardship, along with a deteriorating law-and-order situation. The NCP is entering the political scene at a time when the dust hasn't fully settled, and the people seek a strong and stable governance.

The transformation from an anti-establishment movement into a mainstream force is never easy. The NCP has made a strong start, with its display of religious inclusivity at its rally, where recitations from both the Quran and Bhagvad Gita sought to deliver a message of unity — significant, given concerns over the security of Hindu minorities in post-Hasina Bangladesh. If it pursues multiculturalism and secularism, it could pose a formidable threat to the right-wing Bangladesh Nationalist Party. The true test for the NCP will be whether it can fight for a more just, inclusive, and democratic Bangladesh.

NATION

THE ACADEMIC LINK BETWEEN NEPAL AND INDIA

On February 16, a third-year woman student from Nepal was found dead by suicide in the Bhubaneswar-based Kalinga Institute of Industrial Technology (KIIT). Initial investigation by the police revealed that harassment from a fellow male student had led the student to take her own life. Other students from Nepal carried out a protest stating that the university had ignored the consistent complaints made by the female student about the harassment. This led to KIIT halting academic activities and ordering students from Nepal to vacate the campus. This move caused widespread outrage, with the Nepali government also getting involved. KIIT eventually withdrew the order and resumed the academic session.

This piece intends to shed light on some necessary but seldom discussed issues affecting students from Nepal in India.

Foreign student enrolment in India

The latest available All India Survey on Higher Education (AISHE) data reveals that during 2021-22, 46,878 foreign students from 170 nations were enrolled in various institutes of higher learning in India, and that the highest share of foreign students came from Nepal (28%). The percentage share of foreign students from Nepal had been the highest (21% when the figure for total foreign student enrolment was 34,774) even in 2012-13, as per AISHE data. It is thus evidenced that while the number of foreign students enrolling in India has been on the rise over the years, majority of them came from Nepal.

These students are spread across the nation — from Kashmir University in the north to Kerala University in the south, from North Eastern Hill University (NEHU) in the east to Gujarat Ayurveda University in the west. While the enrolment is highest in the undergraduate category, enrolment in higher categories like PhD displays a steady increase, although it is far from being impressive. Students from Nepal display an increasing attraction to Indian institutes offering training and degrees in engineering and technology. As a matter of fact, their presence in IITs (Delhi, Kanpur, Roorkee, Guwahati among others), the Indian Institute of Science (IISc Bangalore), and other private institutes like KIIT, has been substantial.

An academic relationship

Nepal's academic relationship with India and Indian academic institutions in particular illustrate a rich history. Paying a cursory look at that historical tapestry, as shown by scholars like Pratyush Onta or Rhoderick Chalmers, would help us recognise the contribution of Banaras and Darjeeling in shaping Nepali public sphere from both within and outside Nepal. However, unlike the colonial legacy associated to the 'Gorkhas', the cultural linkage between Nepal and India, which epitomised India as an educational hub for the Nepalis, is as old as the gurukul system. Since the days of the Rana regime when education in Nepal remained exclusively an elitist affair, places in India like Banaras, Patna, Dehradun, Gorakhpur and Darjeeling opened up opportunities to those who could afford to send their wards to India for education.

Further, when it comes to the history of the 'modern' formal education system in Nepal, a cursory glancewill reveal that not only is it not very old, but it also displays intricate connections with India. It is said that the western-style of education began in Nepal with the establishment of the

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Durbar High School in 1854, although accessible only to the children of the royal family and courtiers. In 1901, some steps were taken for the benefit of the public, as schools, such as the Bhasa Pathshala (Language Schools), were opened up with Nepali (then known as Gorkhali/Khas) as the medium of instruction. The Tri-Chandra College was established in Kathmandu in 1918 and was initially affiliated to Calcutta University which later shifted to Patna University, India. As per this affiliation, the responsibility of the college lied only with the teaching part while the overall academic programme, including courses, textbooks, pedagogy, examinations, award of degree, were run by the affiliating Indian institute.

Letting go of colonial influence

Thus, without even being colonised, the colonial legacy of Nepal's education system was established through two routes: first, by affiliating the first college in Nepal to universities of colonial India, thereby, diminishing any opportunity to premise pedagogy around Nepali roots and branches (except language); and the second was through college instructors, all of whom had received their master's degrees from Indian universities, and therefore felt secure in following the same content. Before the establishment of the Tribhuvan University in 1959, there was no provision for postgraduate instruction in the country, and higher education was limited to the undergraduate level. Social science teaching, followed by science, was introduced in Nepal only in the 1940s, starting with economics and geography, while sociology and anthropology came a little while later in the 1950s.

In summary, until the 1950s, the colonial legacy of British India strongly influenced Nepal's education, even when attempts were undertaken to 'Nepalise' the education system. Towards this end, the Gandhian model of education was valorised as a reference point albeit with certain tweaks. Finally, in 1954, the government constituted the National Educational Planning Commission (NEPC) to give recommendations across all aspects of education, having declared that the goal is to make education relevant to 'national need'. Later, with the introduction of the New Education System Plan (NESP) in 1971, the entire machinery was revamped. Nepal began her independent journey in the sphere of higher education, even though students from Nepal continued to enrol themselves in Indian higher education institutions. Major players within the intellectual fieldpost-1950s Nepal, were trained in India, and with the passage of time the numbers kept on rising, even amidst ups and downs in diplomatic relations between these two nations.

Cultural capital

Higher educational training, even though available as a commodity, still embeds avenues that register learning experiences as impactful memories which shape future lives and proclivities. These memories, among other things, are potential sources of South Asian cultural capital that grows spontaneously when nurtured with care. And when this process involves the category of 'foreign students', it becomes the responsibility of the host institution to prevent the process from turning into a pedagogy of the oppressed.

Students are students, no matter where they are from. Creating categories within studenthood and offering differential treatment is an act of institutionally sponsored ragging that devalues the institution, renders the educational ambience volatile, and most importantly, propagates a culture of misanthropy, thereby nullifying the core of education in itself, no matter where the institution appears on the charts of national or international grading systems.

Moreover, the KIIT instance, when viewed in the light of the Indo-Nepal Peace Treaty of 1950, appears to be a case that is in direct conflict with Article 6 (confirms national treatment to be offered to the nationals of either country) and Article 7 (confirms reciprocal privileges of residence, ownership of property, participation in trade and commerce, movement to the nationals of one country in the territories of the other) of the said Treaty, and thereby has the potency to affect bilateral ties between India and Nepal.

WHEN SC DEFINED EQUALITY IN UNION WORKER'S CASE

Who was Anwar Ali Sarkar? A freedom fighter? A member of a mob? A union worker? While there are few references to him in court records or history books, it's a name that is immortalised as the respondent in Appeal No. 297 in a landmark Supreme Court ruling of 1952 on the right to equality.

• While striking down a law which fast-tracked his case and tried him in a special court, the apex court said that the move fell foul of the right to equality under Article 14 of the Constitution. The court also for the first time spelt out the nature of the right and how it works.

• On February 26, 1949, Sarkar was part of a mob of 50 young men who attacked the Jessop factory, an engineering company in Dum Dum, killing three European supervisory staff. Court records show that the victims were "battered to death and their corpses were thrown into blazing furnaces."

• Acting swiftly to mitigate international tensions, the West Bengal government on August 17, 1949, promulgated the Special Courts Ordinance, a law that called for swift trials in special cases.

• Special courts set up under this law could conduct the trial without the presence of the accused and even refuse to summon key witnesses. Sarkar was arrested on October 11.

Do You Know:

• On January 25, 1950, just a day before the new Constitution came into force, it was notified that King v Anwar Ali Sarkar would be heard under the Special Courts law.

• Court records show that the prosecution alleged that Sarkar was a member of the Executive Committee of the Union of workers of Jessop & Co., and took a leading part in the workers' agitation against retrenchment and for Puja bonus. The defence, however, argued that he wasn't present at the spot.

• On March 31, 1950, S N Guha Roy, then Sessions Judge of Alipore, awarded Ali and 49 others a sentence of "transportation for life", a punishment that involved sending a convict to exile or banishment. Under colonial laws, dissidents of the State were routinely given punishments that included sending them to 'Kala Pani' in the Andaman and Nicobar Islands.

• In an appeal filed in the Calcutta High Court, Anwar Ali Sarkar invoked Article 14 of the Constitution that guaranteed his right to equality before the law and equal protection of the law and sought to be treated like an ordinary criminal and thus tried in an ordinary court and not a special one only because he had killed white men.

• Sir Arthur Trevor Harries, an Englishman who was then Chief Justice of the High Court, agreed with the petition. The HC held that while "classes of offences" or "classes of cases" could be referred to the special courts, only referring "cases" is violative of Article 14.

• The ruling became the foundation for the "reasonable classification" test under Article 14 that is now applied almost as second nature. The test dictates when a law can provide an exception to the right to equality and apply to a specific class of people. However, the classification must be based on "intelligible differentia" (clear reasons for singling out that class of people) and must have a "rational relation" to the object of the law.

LONG ROOTS

If institutions are serious about rooting out sexism, they must walk the talk. Instead of merely celebrating the entry of more women in the workforce, they have to provide an enabling atmosphere for those on the rolls. In a judgment last week, the Supreme Court of India showed its intent by declaring that with more and more women joining judicial service, it was time for the judiciary to be more cognisant of their well-being at the workplace. Reinstating two women judicial officers of Madhya Pradesh who had been sacked for "inefficiency", despite the fact that one of them had suffered a miscarriage, Justice B.V. Nagarathna said it was not enough to "find comfort solely in the growing number of female judicial officers if we are unable to secure for them a sensitive work environment." The judgment set aside the ouster of two civil judges, Sarita Choudhary and Aditi Kumar Sharma, terming the termination orders "punitive, arbitrary and illegal". That Justice Nagarathna, one of two women judges in the Court, which has a sanctioned strength of 34, had to step in, is an indication of the long and difficult fight for gender equality, and the need for change in mindsets and reform. In several past verdicts too, the Court had drawn attention to gender stereotyping and discrimination against women.

In her judgment, Justice Nagarathna underscored the importance of having more women in the judiciary, and this holds true of other branches of the government such as the legislature and the executive. Greater representation of women will ensure better understanding of their needs and lead to better policies. The freedom from discrimination or equal protection of the laws during pregnancy and maternity are precious rights for the women workforce, she noted. Just as motherhood brings joy, a miscarriage has a deep psychological, physical and mental impact on women, and the onus is on policymakers to be aware of this and act accordingly. While gender cannot be an excuse for poor performance, it is incredible that the Court had to intervene to call out a wrong on a basic issue such as maternal rights. In doing so, the Court has also, yet again, reminded not only those in power but also the larger society, that age-old, entrenched patriarchal systems have no place in a country aspiring to emerge as a developed economy. If women are not provided a larger role in decision-making, their concerns will remain invisible to policy. To achieve that goal, education has to be accessible to girls in a non-discriminatory manner. At work, they must be assured of a safe and healthy environment as a basic right and guarantee.

TOON TROUBLE

The order of the Ministry of Information and Broadcasting, directing the removal of a cartoon featuring the Prime Minister, Narendra Modi, from a Tamil magazine's website, is unwarranted and may not fall under any of the permissible grounds for such removal. Vikatan Plus, an online-only magazine published by the Vikatan group, has decided to take legal steps to challenge the order. It had earlier defended the content at a hearing before an inter-departmental committee constituted under the Information Technology (Intermediary Guidelines and Digital Media Ethics Code) Rules, 2021. The Ministry's move against the cartoon goes against both freedom of expression and freedom of the press. The cartoon is a piece of trenchant political commentary, as it depicted Mr. Modi shackled in chains in the presence of United States President Donald Trump.

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This is an apparent reference to criticism voiced in some quarters that Mr. Modi failed to protest against the ill-treatment of Indian illegal immigrants deported from the U.S. The Prime Minister's approach to a foreign policy issue cannot be immune to symbolic denunciation through a cartoon. It is even more concerning that the Vikatan website itself has been rendered inaccessible to some users, apparently based on undisclosed orders or informal instructions to web service providers.

While a formal order to take down content is provided for in law, it will be wholly untenable if the website was sought to be blocked without recourse to established procedure. The claim that the website has been inaccessible to some since February 15 has not been denied so far. Section 69A of the Information Technology Act empowers the government to block content on specified grounds, including in the interest of "friendly relations with foreign States or public order or for preventing incitement to the commission of a cognisable offence", but it is not known which of these grounds has been invoked, as the order is confidential. How an order passed in the exercise of a statutory power can be deemed a secret is inexplicable. Even in times like the present when taking offence is a national pastime as well as a reason for several Chief Ministers to unleash the police on their detractors, cartoons ought to enjoy greater immunity than the written word. In this case, it is doubtful if political criticism through a cartoon can be deemed to affect friendly ties with the U.S. or undermine public order. The Centre would do well to reverse the blocking order soon. The power to block content ought to be used sparingly, mainly to combat offensive content such as hate speech, incitement to violence and child pornography, but not in deference to a political demand and without regard to freedom of expression.

HUMOUR, PERVERSITY

In suggesting that the Government should come with regulatory measures to prevent vulgarity or perversity in the name of humour being aired, the Supreme Court has expanded the scope of petitions by YouTubers caught in a criminal case over alleged obscenity in a digital programme. The Court has sounded the right note by calling for a discussion among stakeholders on regulations that would not impinge on the freedom of speech and expression and will be within the framework of "reasonable restrictions" permitted in the Constitution. However, such regulations may be superfluous, as existing laws provide for dealing with possible obscenity or vulgarity in electronic and digital content. That those associated with the controversial programme, 'India's Got Latent', are facing FIRs and have sought protection from arrests show that the present regulations may be sufficient. Under the Bharatiya Nyaya Sanhita (BNS), display of content in electronic form shall be deemed to be obscene, "if it is lascivious or appeals to the prurient interest", and is a punishable offence. Similar penal provisions are available in the IT Act. The Programme Code under the Cable Television Network Rules prohibits programmes that offend decency, among other things. The Information Technology (Intermediary Guidelines and Digital Media Ethics Code) Rules, 2021 provide for age-based classification and a three-tier system of grievance redress, under which users could approach the platform, a self-regulatory body and a government inter-departmental committee.

The debate between 'clean' and 'dirty' humour is age-old, but the distinction is well-understood. It is only in the context of public outrage over specific instances of obscenity or vulgarity that voices are raised about the need to maintain decency and morality. In this case, the folly of the participants in making sexually perverse comments is matched by the zeal of the complainants and the police, mainly because of the content being leaked outside a paying audience. The participants may have thus rendered themselves vulnerable to prosecution, but a mature society should consider whether anyone should go to prison for such a verbal offence. The tendency to

get the police to file FIRs wherever someone complains is also to be deprecated. The Internet's universal reach should not become an excuse to confer universal jurisdiction. This often takes the case to the Court, as those named in such FIRs want multiple cases to be clubbed, leading to attention and a widening of the debate. An extreme case such as this does evoke extreme reactions, but law enforcement and legal institutions should not be overzealous in their response.

WHAT WERE THE OBJECTIONS TO NEW ADVOCATES BILL?

The story so far:

On February 22, the Centre withdrew the contentious Advocates (Amendment) Bill, 2025, stating that a revised version incorporating public feedback will be introduced. The Bill sought to amend the Advocates Act, 1961. However, its introduction faced strong opposition from sections of the bar. The government's decision to retract the Bill followed a letter from the Bar Council of India (BCI) to Union Law Minister Arjun Ram Meghwal, pointing out that the proposed amendments threatened the "autonomy and independence of the bar."

What is the objective of the Bill?

The Law Ministry underscored the need to amend the 1961 Act to address "contemporary challenges" and align the legal profession with global best practices. It pointed out that seismic shifts in the legal landscape necessitate reforms to better equip lawyers for a rapidly evolving world. The draft Bill comes over a year after the introduction of the Advocates Bill, 2023, which was passed to eliminate "touts" and curb "superfluous enactments" in existing statutes.

Are lawyers allowed to go on strike?

A key point of contention in the Bill is its proposed ban on strikes and boycotts by lawyers, citing their disruptive impact on judicial proceedings. It introduces Section 35-A, explicitly prohibiting advocates and bar associations from abstaining from court work. Violations would constitute "misconduct," subjecting offenders to disciplinary action under the 1961 Act and the Bar Council of India Rules, 1975. However, the Bill clarifies that the restriction does not apply to strikes that do not "impede the administration of justice" and are intended to address "legitimate concerns about professional conduct," such as working conditions or administrative issues.

Senior advocate Chander Lall underscored that strikes are a legitimate means for lawyers to voice grievances. "The Bill's withdrawal was a direct consequence of protests led by various bar associations. However, court boycotts and strikes inevitably disrupt judicial proceedings, ultimately harming litigants. That said, I believe the bar exercises restraint and resorts to strikes only in cases of extreme exigency," he told The Hindu. Echoing similar sentiments, advocate Nipun Saxena pointed out that strikes have historically served as a powerful tool for the legal fraternity to oppose state excesses. "Barrister Dr. Saifuddin Kitchlew was among the earliest vocal opponents of the Rowlatt Act, 1919, which granted the British government sweeping powers to arrest and detain individuals without trial in colonial India. He organised widespread boycotts of British courts by Indian lawyers....Lawyers have long stood as the first line of defence in safeguarding the rule of law and preserving constitutional values," he said.

Is there executive control?

The proposed law allows the Centre to nominate up to three members to the BCI, alongside its existing members — the Attorney General, Solicitor General, and representatives from State Bar

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Councils. The BCI has strongly opposed this provision, calling it "draconian" and "arbitrarily inserted." The Bill also introduces Section 49B, empowering the Centre to issue binding directions to the BCI, set bar council eligibility criteria, and regulate the BCI's oversight of State bar councils. "Since the government is the largest litigant, it should have no role in an autonomous body like the BCI. Such influence would undermine judicial independence, as advocates serve as officers of the court," Mr. Lal told The Hindu.

The amendments significantly expand the BCI's authority, potentially rendering State bar councils redundant. Traditionally, misconduct complaints against advocates are handled by the disciplinary committees of State bar councils. However, Section 45B now allows the BCI to hear complaints nationwide and suspend advocates at its discretion. Additionally, Section 48B empowers the BCI to dissolve a State bar council and replace it with a committee if it deems the council ineffective. Mr. Saxena argued that these changes undermine the federal structure of the 1961 Act. "The BCI and State bar councils were created under distinct provisions. Stripping State councils of their core functions reduces them to mere administrative bodies with no real authority," he said.

How will it impact corporate lawyers?

The Bill expands the definition of "legal practitioner" under Section 2(i) to include lawyers associated with foreign law firms, corporate entities, and practising advocates. It grants statutory recognition to corporate lawyers working in law firms and as in-house counsel — a long-standing demand that has gained momentum in recent years. Additionally, the Bill empowers the Centre to formulate rules governing the entry of foreign law firms and lawyers into India. This has faced strong opposition from the BCI.

The Bar Council of India Rules for Registration and Regulation of Foreign Lawyers and Foreign Law Firms in India, 2022, allows foreign lawyers and firms to practise law in India on a reciprocal basis. However, these rules were later challenged before the Delhi High Court, with petitioners arguing that the BCI lacked the statutory mandate to permit such practice. "This proposed change would have had little impact on corporate lawyers in law firms, as most are already licensed advocates. However, its implications are far more significant for in-house counsel. A crucial question is whether this move intends to gradually blur the distinction between 'advocates' and 'legal practitioners'. For instance, would in-house counsel be granted rights of audience before courts, arbitral tribunals, and other judicial fora? Moreover, it could have definitively settled the long-standing debate on whether legal privilege extends to advice provided by in-house counsel to their employers", Mrinal Ojha, partner at Solaris Legal told The Hindu. He further pointed out that while the structured entry of foreign law firms into India is a welcome development, the proposed framework remains ambiguous.

"Jurisdictions like Singapore serve as valuable precedents, having successfully balanced the interests of international law firms and the domestic legal fraternity. However, for any regulations introduced by the Centre to be effective, they must be formulated in consultation with all key stakeholders — the BCI, bar associations, and the legal community at large," Mr. Ojha added.

What is the way forward?

"The Bill's withdrawal is a welcome step, and one hopes that inclusive dialogue will lead to meaningful reforms. Any changes must safeguard judicial independence and the autonomy of regulatory bodies," Mr. Lal stated.

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Mr. Saxena further underscored the need to consult High Courts before implementing any reforms, noting that Section 34 of the 1961 Act empowers them to regulate the practice of advocates before them and subordinate courts.

MODI QUESTIONS 'KHAN MARKET GANG' SILENCE ON COLONIAL-ERA DRAMA LAW

Prime Minister Narendra Modi on Saturday said his government has abolished approximately 1,500 obsolete laws, many of which were enacted during the British rule.

• Addressing the NXT Conclave at Bharat Mandapam on the launch of NewsX World channel, the PM said the "Dramatic Performance Act" was enacted by the British around 150 years ago to prevent use of drama and theatre against the then government.

• He said the law had provisions to make arrests if 10 people were found dancing at a public place. "It means if 10 people are dancing in a baraat during a wedding, the police can arrest them along with the groom. This Act was there even after 75 years of Independence. Our (NDA) government abolished that law," the PM said.

• The Dramatic Performances Act, 1876, gave the government powers to "prohibit public dramatic performances which are scandalous, defamatory, seditious or obscene". Though the law was formally repealed in 2018, as part of the Modi government's exercise to weed out obsolete laws, it has not been in use since at least 1956.

• On May 10, 1956, in a ruling titled State versus Baboo Lal And Ors, the Allahabad High Court ruled that the law was inconsistent with the Constitution of India.
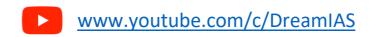
Do You Know:

• Dramatic Performances Act, 1876 was among those laws enacted by the British to clamp down on the budding Indian nationalist sentiment following the visit of the Prince of Wales, Albert Edward, to India from October 1875 to May 1876. Other laws enacted during this period were the draconian Vernacular Press Act, 1878, and the sedition law of 1870.

• Under the Dramatic Performances Act, "any play, pantomime or other drama performed or about to be performed in a public place" could be banned if the government was of the "opinion" that the play was "of a scandalous or defamatory nature", was "likely to excite feelings of disaffection to the Government established by law", or "to deprave and corrupt persons present at the performance".

• Any Magistrate could warrant the search and seizure of "any house, room or place is used, or is about to be used, for any performance prohibited under this Act". The law prescribed a jail term of up to three months and a fine or both.

WHAT ARE THE ISSUES AROUND DELIMITATION?

The story so far:

There has been a renewed debate about delimitation after the issue was raised by the Chief Minister of Tamil Nadu. The delimitation of constituencies for the Lok Sabha and State Legislative Assemblies is to be carried out on the basis of the first Census after 2026.

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What are constitutional provisions?

Delimitation means the process of fixing the number of seats and boundaries of territorial constituencies in each State for the Lok Sabha and Legislative assemblies. This exercise is performed by the 'Delimitation Commission' that is set up by an act of Parliament. Such an exercise was carried out based on the 1951, 1961 and 1971 Census. The number of seats in the Lok Sabha, based on the 1971 Census, was fixed at 543, when the population was 54.8 crore. However, since then, it has been frozen in order to encourage population control measures. This number is to be readjusted based on the first Census after 2026. As the 2021 Census that was originally postponed due to COVID-19 is yet to commence, there have been debates linking it to the ensuing delimitation.

What are the issues?

The population explosion that happened in our country during the last five decades has been uneven with some States like Uttar Pradesh, Bihar, Madhya Pradesh and Rajasthan having a greater increase than States like Kerala, Tamil Nadu, Karnataka and Andhra Pradesh. There are two scenarios that are being discussed with respect to the revised delimitation exercise.

The first is to continue with the existing 543 seats and their redistribution amongst various States (Exhibit 1). The second is to increase the number of seats to 848, with proportionate increase among various States (Exhibit 2). Home Minister Amit Shah stated in a recent public meeting that the number of seats will not be reduced for any State and that it would be increased on a 'pro-rata' basis for all States including the southern States. The basis for this 'pro-rata' share for States — whether it will be based on the existing percentage in the share of seats or on projected population — is not clear.

As per Exhibit 2 which is based on projected population, it is evident that southern States, smaller States in the north like Punjab, Himachal Pradesh and Uttarakhand, as well as the northeastern States are bound to be at a disadvantage when compared to the larger northern States. This may go against the 'basic structure' of federalism in our polity. It will lead to a feeling of disenchantment in the States that stand to lose in their proportional representation, and thereby political significance, despite controlling their population.

Southern States that have a 24% share in the number of seats at present would see it decline by 5%.

What can be a solution?

'Democracy' means 'rule or government by the people'. It follows that the government is elected by the majority with the broad principle of 'one citizen-one vote-one value'. However, it is pertinent to note that this principle has been diluted, in the interest of population control, since 1976 when the delimitation exercise was postponed for the first time.

In a federation like the U.S., the number of seats in the House of Representatives has been capped at 435 since 1913, though the population of the country has increased almost four times from 9.4 crore in 1911 to an estimated 34 crore in 2024.

The main job of a Member of Parliament (MP) is to legislate on 'Union List' matters and hold the Union government accountable. Majority of the schemes of the Union Government are implemented by State governments. The country has functioned with 543 Lok Sabha MPs for the past five decades while the population increased from 55 crore to 145 crore. India's population is

projected to peak at around 165-170 crore, an increase of around 15% from the current level, in the next three decades and then decline. Considering the above factors, the 543 MPs in Lok Sabha may be capped at the existing number. It would ensure status quo in representation from various States and uphold the federal principle. The MPs and leaders of both regional and national political parties from the south, smaller States in north and the northeastern States should consider it their responsibility to demand such a cap from the Parliament in order to protect the political interest of the regions they represent. The number of MLAs in each State may be increased in line with the projected population to address the democratic representational requirement.

TYRANNY OF NUMBERS

The call at an all-party meeting chaired by Tamil Nadu Chief Minister M.K. Stalin, in Chennai on Wednesday, to freeze the strength of the Lok Sabha and State Assemblies for 30 years beyond 2026 might seem like pushing away a pressing problem into the distant future. The challenges in 2056, when delimitation is eventually taken up, could be far more complex than those of the last exercise, conducted after the Delimitation Commission was set up in 2002. Even if the northern States bring down the fertility rate to replacement level by that time, the grouse of the southern States, that seat share as a proportion of the total strength of the Lok Sabha will come down, will still not find redress. Moreover, the imbalance in the number of electors across constituencies varies in each State. Between 2004 (the last general election before the 2008 delimitation) and 2024, the country's electorate has grown by approximately 45%. In just over 15 years, there has been significant malapportionment in many constituencies. In Karnataka, Bangalore North has 3.2 million voters, while Udupi Chikmagalur, with an electorate of just under 1.6 million, has less than half that number. One solution, doubtless a partial one, could be to allow delimitation within each State, but not across the country. This would be in keeping with federal principles but might be unfair to large States that have seen a huge, disproportionate population jump over the last 50 years.

The concerns of the southern States regarding a potential unfair outcome are valid. There is a risk of losing significant representation in the Lok Sabha if population strictly governs seat allocation. However, the Constitution recognises that apportionment should be done "so far as practicable", allowing room for considerations beyond mere numbers. Mr. Stalin has expressed apprehension that if the 2026 Census data is used as the basis for delimitation, and Tamil Nadu's seat share is reduced, it would lead to "indelible injustice". The all-party meeting rightly pointed out that Tamil Nadu is not opposed to delimitation per se, but that the process should not penalise progressive States (the entire southern region). Since delimitation has remained a contentious issue, the Union government should build a consensus on the terms of reference for the next Delimitation Commission. A transparent and inclusive approach can help restore the missing trust between the ruling party at the Centre and the non-BJP Opposition. Moreover, those advocating for an early delimitation should respect the Constitution's federal character and demonstrate flexibility in addressing regional concerns.

DOUBLE TROUBLE

The integrity of the electoral system in India is dependent upon the confidence reposed in it by prospective voters and the participatory political parties. In recent years, the Election Commission of India (ECI) has drawn flak — from overblown to deserved reasons — from political parties and civil society activists concerned about trends in Indian democracy. A new complaint after recent State elections relates to the increased number of electors in the Assembly polls when compared

to the numbers registered in the general election for the same year (2024). While a report in The Hindu found that such discrepancies in electorate registration were not unusual when compared to previous election cycles, the question (raised vociferously by the Opposition Congress party) as to how a State such as Maharashtra registered an increase of 48 lakh voters in just six months since the general election has not been adequately answered by the ECI. This along with the ECI's disclosure that the nature of registration allowed for different electors to have the same Electors Photo Identification Card (EPIC) number, has allowed Opposition parties, particularly the Trinamool Congress, to raise questions about the credibility of the registration process. What is worrisome is the possibility of electors voting across States.

Prima facie, this discrepancy in EPIC numbers — which the ECI has averred that it will rectify by updating the numbers in its voter database to make them unique — is not problematic. Even if the EPIC number is shared by different voters, they can only vote with their verified ids. Yet, the larger problem, of a possibility of a voter having multiple EPIC numbers across different States, calls the process in question. For example, a migrant voter can vote in a particular State of residence and in his/her home State if elections are held in close succession as there is a good possibility of the duplicate EPIC number remaining in the database. The most effective solution would be to link the Aadhaar number and biometric verification for voting. But this is still not foolproof. The Aadhaar's purpose is to identify residents, and not citizens, and would have to be supplemented by another proof for voting eligibility. Second, an Aadhaar number on electoral rolls could result in misuse such as profiling, and the ECI has to mask it when the rolls are made available to political parties. Besides, biometric verification for de-duplication should be supplemented with clear alternative identity verification as the former has the potential of excluding genuine voters because of technological failures. The ECI must be open to undertaking a clear de-duplication exercise that will allow a voter to have only one EPIC number and voter id, with the eligibility to vote only in their area of residence.

'40% OF POPULATION DOES NOT HAVE ACCESS TO EDUCATION IN LANGUAGE THEY UNDERSTAND'

Nearly 40% of the global population does not have access to education in a language they speak or understand, according to UNESCO's Global Education Monitoring (GEM) team.

"In some low- and middle-income countries, this figure rises to 90 per cent. More than a quarter of a billion learners are affected," a senior GEM team member said.

The team, in a report titled "Languages matter: Global guidance on multilingual education', recommended implementation of multilingual education policies and practices to nations with the goal of creating educational systems that benefit all learners.

Despite countries' growing understanding of the role of home language, policy uptake remains limited, the report said. Implementation challenges include limited teacher capacity to use home languages, unavailability of materials in home languages and community opposition.

The report was compiled on the 25th anniversary of International Mother Language Day, celebrating a quarter-century of dedicated efforts to preserve and promote the use of mother tongues.

It comes at a time when India is in the process of implementing the new National Education Policy (NEP) that advocates multilingual education. The three-language policy in school education has drawn opposition from some States.

The team noted that linguistic diversity is becoming a global reality as migration increases, and classrooms with learners from diverse language backgrounds are more common. Over 31 million displaced youth are facing language barriers in education.

"Countries face diverse linguistic challenges in education, stemming from both historical and contemporary factors. In the first category, often as a legacy of colonialism, languages have been imposed on local populations that prevented their use for instruction and created educational disparities," the report said. "At the same time, large linguistic diversity in some countries presents challenges for education systems, as resources for implementing multilingual education programmes tend to be limited".

In the second category, immigration brings new languages to classrooms in richer countries, enriching linguistic diversity but also posing challenges in instruction and assessment.

AMID THREE-LANGUAGE WAR, DATA SHOWS ONLY ONE-FOURTH INDIANS ARE MULTILINGUAL

In 1968, a national education policy (NEP) formulated by the Indira Gandhi-led Congress government had introduced the three-language formula. Centred on a Hindi-English fulcrum, the policy called for teaching a southern language in Hindi-speaking states and a regional language in non-Hindi-speaking states as the third language.

• Since then the three-language formula has been an issue of intense dispute. In 1968, Tamil Nadu had opposed the policy and has since persisted with a two-language formula of its own.

• Currently, the DMK-led Tamil Nadu government is at loggerheads with the BJP-ruled Centre over its NEP 2020, which has retained the three-language formula with fewer restrictions on the choices of languages. The Centre has, however, maintained that no specific language would be imposed on any state.

• In 1968 and 2020, the stated objective of the three-language formula was to promote multilingualism. However, data from the 2011 Census shows that despite India's language diversity, over half a state's population speaks more than two languages in just eight states and UTs.

• Nationally, 26.02% of the population is bilingual and 7.1% is trilingual, as per the 2011 Census. While the bilingual population has grown from 24.79% in the 2001 Census, the share of trilingual speakers fell from 8.51%.

• Between 2001 and 2011, bilingualism fell in 12 states and UTs, while trilingualism fell in 23 states and UTs.

• Tamil Nadu, despite sticking to its two-language formula, ranked 15th in 2011 for its share of bilingual population at 28.3%. At 3.39%, its trilingual population put the state at eighth from the bottom.

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• The best performing state on multilingualism is Goa – 77.21% of its population is bilingual and 50.82% is trilingual. Goa is the only state where trilingualism exceeds 50%, followed by Chandigarh with 30.51% and Arunachal Pradesh with 30.25%.

• The other states and UTs with high rates of bilingualism are Andaman & Nicobar Islands (67.64%), Arunachal Pradesh (64.03%), Sikkim (63.71%), Nagaland (62.15%), Chandigarh (54.95%), Manipur (54.02%), and Maharashtra (51.1%).

• The 2011 Census also shows that eight of the 10 most common language combinations for bilinguals include Hindi.

Do You Know:

• An NEP is a comprehensive framework to guide the development of education in the country. The need for a policy was first felt in 1964 when Congress MP Siddheshwar Prasad criticised the then government for lacking a vision and philosophy for education. The same year, a 17-member Education Commission, headed by then UGC Chairperson D S Kothari, was constituted to draft a national and coordinated policy on education. Based on the suggestions of this Commission, Parliament passed the first education policy in 1968.

• The National Education Policy, 2020 is the third national education policy of the country. The first came in 1968 and the second in 1986, under Indira Gandhi and Rajiv Gandhi respectively; the NEP of 1986 was revised in 1992 when P V Narasimha Rao was Prime Minister. The third NEP is released under the Prime Ministership of Narendra Modi.

• The NEP only provides a broad direction and is not mandatory to follow. Since education is a concurrent subject (both the Centre and the state governments can make laws on it). The incumbent government has set a target of 2040 to implement the entire policy.

'BYPASSED BY OFFICIALS' OUTSIDE, 'BOUND BY NORMS' AT HOME: WHAT'S HOLDING BACK WOMEN PANCHAYAT MEMBERS

From official bias and socio-cultural norms to the absence of strong deterrent laws, the Ministry of Panchayati Raj panel has identified several reasons why male relatives of elected women representatives in the panchayati raj system are able to act as proxies on their behalf.

• The committee, headed by former Mines Secretary Sushil Kumar, submitted its report recently. The ministry has said it will take measures to implement its recommendations, which include policy interventions, structural reform and "exemplary penalties", to check the practice of 'Pradhan Pati', 'Sarpanch Pati' or 'Mukhiya Pati'.

• The committee, which was constituted in September 2023 as a follow-up action to a Supreme Court order dated July 6, 2023, held four regional workshops across the country to study the issue. The key findings/learnings from the workshops and field visits held by the panel and from their interactions with the women panchayat members:

• Lack or inadequate experience of political leadership: The panel notes that newly elected women representatives "lack exposure and experience in learning the ropes to effectively discharge their new roles and responsibilities as local self-government leaders across all three-tiered Panchayati Raj System, especially at the GP (gram panchayat) levels".

• **Gender-Based discrimination:** The women representatives "continue to face discrimination in the sense of being ignored and bypassed in official, semi-official and even informal meetings by their male ERs (elected representatives)/peer-elected representatives, and as if taking their cue, even the male officials manning the GP machinery also do the same, in generally preferring to interact with male ERs", says the committee. "This fosters the perpetuation of the system of Sarpanch/Pradhan Patis, depriving EWRs of their newly found representative voice and leadership in public affairs, thereby, violating their constitutional rights."

• **Prevailing patriarchal norms and practices:** "The traditional rural society continues to display centuries-old entrenched patriarchal mindsets, and rigid socio-cultural norms such as observing variants of the 'purdah' practices – women covering their heads and even putting a sort of a veil before male peers, more so if they are elders and in public places," says the report.

• **Political pressure:** "Instances abound where the EWRs are subjected to disguised and open threats, coercion and even violence sometimes from the political opponents and dominant groups, and they even resort to using 'No Confidence Motion' as a pressure tactic and a weapon to oust them from their seats, cutting their electoral terms," as per the report.

• **Absence of deterrent laws or penalties:** While "some beginnings have been made to formulate rules and enact law to punish male relatives who de facto run panchayats", the committee says these are not enough. "There is a tendency amongst male relatives to compromise the de jure roles assigned to EWRs."

Do You Know:

• The 73rd and 74th Constitution Amendment Acts established local self-governance in rural and urban India respectively. The two amendments were added to the Constitution's Part IX, titled "The Panchayats" and Part IXA titled "The Municipalities" respectively.

• Following the two amendments, panchayats and municipalities were termed as "institutions of self-government".

• The gram sabha became the basic unit of a democratic system in villages. In municipalities, the term "ward committees" was used. These bodies consisted of all adult citizens registered as voters, and the panchayat or municipality was made accountable to them.

• Direct elections for all three tiers of governance — gram panchayat at village level, taluka or block panchayat at the intermediate level, and zila panchayat or parishad at district level — were introduced. States with a population of less than 20 lakh were exempted.

• Out of the total 1/3rd seats reserved for women, 33% had to be reserved for the Scheduled Castes and Scheduled Tribes. Importantly, one-third of the seats of office-bearers and chairpersons at all levels had to be reserved for women as well.

• A five-year-tenure was prescribed for each body, and elections to the successor body had to finish before the previous body's term expired. In case of the body's dissolution, an election had to be conducted within 6 months compulsorily.

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CONTROVERSY ERUPTS AS ODISHA GOVT. CHANGES DATE OF PANCHAYATI RAJ DAY CELEBRATIONS

The Biju Janata Dal (BJD) on Tuesday staged a peaceful protest against the decision of the Mohan Majhi government to shift the Panchayati Raj Day celebrations from March 5 to April 24, terming it as an "evil design" to systematically erase the legacy of legendary Biju Patnaik.

'Date inconsistency'

The party reacted sharply after Chief Minister Majhi approved a proposal to change the celebration date. "Every year, Odisha observes Panchayati Raj Day on March 5, while April 24 is celebrated as National Panchayati Raj Day across India. On this occasion, awards such as the Rashtriya Gaurav Gram Sabha Award and the Mahatma Gandhi National Rural Employment Guarantee Act Award are presented to Panchayat representatives from various States," the Chief Minister's office said in a statement.

"To address the inconsistency between national and State-level celebrations of Panchayati Raj Day, the Odisha government has decided to shift the observance from March 5 to April 24," the statement added.

Moreover, the State government also said March 5, which is the birth anniversary of Biju Patnaik, would be celebrated in government offices in a grand manner. The day has been a public holiday since 2020. Now it stands withdrawn.

"This reflects the narrow-minded approach of the BJP government. All know the pioneering contribution of Biju Patnaik to panchayati raj system in India. He was the first to bring in one-third reservation for women in panchayati raj system in 1991. Subsequently, it was followed nationally," BJD vice president Debi Prasad Mishra said.

Soon after the BJP came to power last year, it adopted the approach to rename schemes implemented by the previous Naveen Patnaik-led government, which bore the name of Biju Patnaik, rebranding them with 'neutral' names.

Objection on name

Mr. Mishra also raised an objection to mentioning of Biju Patnaik's name as Bijayananda Patnaik in official orders. "Though Bijayananda Patnaik was his official name, he was widely known and adored as Biju. People loved and respected him by that name. We fail to understand what the BJP government hopes to achieve with such narrow-minded tactics."

UTTARAKHAND AVALANCHE: 33 RESCUED, SEARCH FOR 22

An avalanche hit a Border Roads Organisation (BRO) project site near Mana — India's "first" village — in Uttarakhand's Chamoli district, trapping several workers and prompting a rescue operation that involved multiple agencies.

— The incident took place between Mana village and Mana Pass, near the Indo-Tibetan border. An officer of the BRO said the employees had been hired by a contractor for the construction of a road near Mana village.

— Mana, a tourist attraction that was earlier called the "last village of India" and is now referred to as the "first Indian village" before the China border, is one of the few villages in the district where people migrate to lower altitudes between November to April every year to avoid extreme winter conditions when temperature drops to minus 17 degrees Celsius and more.

— At the time of the avalanche on Friday, the village was deserted as all the villagers were in Gopeshwar, the district headquarters, nearly 100 km from Mana.

— Located at the height of 10,500 feet (from the sea level), Mana village has over 1,200 residents and 824 of them are enrolled as voters. Some of the villagers also run homestays. The nearest hospital is 3 km away in Badrinath.

Do You Know:

— According to UNDRR, an avalanche is a rapid flow of snow down a hill or mountainside. Although avalanches can occur on any slope given the right conditions, certain times of the year and certain locations are more dangerous than others.

— According to CDRI website, "In India, over 58% of the land is vulnerable to earthquakes, 12% to floods, 15% to landslides, and more than 10% to forest fires. Of India's 7,516 km coastline, nearly 5,700 km is at risk from cyclones and tsunamis.

— The Coalition for Disaster Resilient Infrastructure (CDRI) is an international organisation set up on India's initiative in 2019. It is a partnership of national governments, UN agencies and programmes, multilateral development banks and financing mechanisms, the private sector, and knowledge institutions that aims to promote the resilience of new and existing infrastructure systems to climate and disaster risks in support of sustainable development.

HIMALAYAN TRAGEDY

Earlier this week, Indian Army and Indo-Tibetan Border Police teams rescued 23 workers who were stuck in a rubble of snow and ice, following an avalanche at Mana village, Uttarakhand. Eight workers died in the disaster, which occurred at a Border Roads Organisation construction site that had housed 54 labourers in eight containers. To say that the rescue operation was arduous would be an understatement. The rescue teams worked in a near-continuous 60-hour shift amidst heavy snowfall at an elevation of 10,500 feet above mean sea level. With the roads blocked by the snow, helicopters were used to evacuate those rescued to the Joshimath Army Hospital — five helicopters from the Indian Army, two from the Indian Air Force and one civilian copter. Along with the sheer physical effort expended in the extraction, the rescue operation employed a drone-based detection system to detect the containers that were buried under several feet of snow, ice and rock.

Avalanches in the Himalayan States, like the one in Mana, which is among the last outposts in Indian territory and close to the border with China, are not uncommon. Villagers here have historically been 'winter-migrants', which means that during the winter months the village is deserted. Coinciding with the ritual closing of the Badrinath temple in November, there is migration to villages lower down, such as Gopeshwar and Jyotirmath, for the winter, with residents returning only when the temple reopens in April or May. This is part of traditional wisdom and has a lot to do with the historical experience of the upper Himalayan stretches being prone to disasters. While these practices may have saved the resident villagers, it still raises the question as to whether the workers — several of them migrants — were adequately aware of the

risks of their enterprise. Given the strategic location of the village and the need to develop improved roads for civilian and military access, there will always be a sizeable number of people engaged in activity in regions that are inherently inhospitable and risk-prone. Once disaster strikes, efforts focus on the rescue operation, and once they conclude, there is little reflection on whether preventive measures could have been taken. Avalanches cannot be predicted with precision, but steps can be taken to design containers that are safer to live in and can improve the odds of survival. There is much to learn from the way bomb shelters are imagined or how research stations at Antarctica are designed. All of this requires a greater sensitivity to workers who toil amidst hazards and not merely label these tragedies as inevitable consequences of natural disasters.

NITI AAYOG FLAGS NATIONAL SECURITY RISK WITH QUANTUM TECHNOLOGY

Countries that develop quantum capabilities will secure an "unprecedented strategic edge", which can "jeopardize" national security and economic competitiveness, NITI Aayog's Frontier Tech Hub said in a quarterly release Wednesday.

• "Advancements in quantum technology would expose the country to increased risk of technological surprise and strategic blind spots. Being caught off guard by quantum driven advancements would jeopardize national security, economic competitiveness, and technological leadership," the release said.

• To mitigate risks to national security from quantum technologies, the release recommended developing a post-quantum cryptography (PQC) transition plan. PQC refers to cryptographic algorithms designed to withstand attacks from quantum computers, ensuring improved data security.

• "Countries are in a race to develop and implement PQC to safeguard their data. Those who master PQC first can protect their critical information while others remain vulnerable," it said.

• Over 170 professors across leading academic institutions in India are actively working in quantum technology domains. Historically, India's quantum efforts have had a "strong focus on fundamental science rather than technology development and commercialization," the release said.

Do You Know:

• The NQM, with a budgetary outlay of Rs 6,003 crore, was set up to build quantum-related capabilities in key domains, namely, computing, communications, sensors, and materials. The estimated expenditure for the ongoing financial year under the mission was reduced from Rs 427 crore to Rs 86 crore in the latest Union Budget. For 2025-26, it is projected to rise to Rs 600 crore.

• Quantum technologies can crack modern encryption, destabilize financial markets, and transform military capabilities, hence India needs to assess vulnerabilities, adopt post-quantum cryptography, and forge bilateral partnerships for technology access, the release said.

• Unlike classical computers, which process information in binary (0s and 1s), quantum computing uses quantum bits (qubits) that can exist in multiple states at the same time, allowing it to perform certain tasks much faster.

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• A sufficiently powerful quantum computer can also break public-key encryption algorithms, in turn making modern internet security, online banking, and secure communications obsolete.

NEEDED: THE BIG LEAP

The past six weeks have shattered conventional wisdom about AI dominance. A new era of innovation, disruption, and geopolitical manoeuvring has arrived. Those who fail to adapt risk being left behind.

— January brought a stark wake-up call with the emergence of DeepSeek. The Chinese start-up unveiled its AI model, DeepSeek-R1, which matched the capabilities of leading models like OpenAI's GPT-4 while also being open source and free.

— Meanwhile, the AI Action Summit in Paris, where leaders from nearly 100 nations convened to shape AI's future, sent a resounding message: Growth must take precedence over excessive regulation. A defining moment came when France unveiled a €109 billion AI investment plan, underscoring the urgency of substantial investments to maintain global competitiveness.

— India's advocacy for a human-centric AI approach, passionately championed by Prime Minister Narendra Modi, also gained traction.

— DeepSeek's success serves as both a wake-up call for established players and an inspiration for emerging challengers.

— China's pivot from NVIDIA's proprietary CUDA to PTX isn't just a workaround — it's a strategic masterstroke. By breaking free from a locked ecosystem, they are ensuring their AI advancements remain resilient, adaptable, and unshackled from external constraints.

— The AI race has reached a breaking point. Nations are no longer just competing on innovation — are battling for control. Those who lead will shape the future, while those who lag will find themselves dependent, vulnerable, and left behind in the new AI order.

Do You Know:

— India stands at a decisive juncture. Our aspiration to become a developed nation by 2047 — Viksit Bharat — is not merely an ambitious goal but a defining mission that requires a fundamental transformation of our economy and society.

— For India, the era of incremental progress is over. If we are to achieve Viksit Bharat by 2047, we cannot afford to be mere participants in the AI revolution — we must lead its disruption.

— Our success will depend on three non-negotiable imperatives. One, world-class talent to drive AI excellence and global competitiveness. Two, cutting-edge R&D and innovation to ensure India is not just a consumer of AI but a creator of breakthrough technologies. Three, an uncompromising commitment to human-centric AI, ensuring that innovation serves society and strengthens our global standing.

— This must be the hallmark of India's AI leadership — one that is bold, visionary, and unapologetically ambitious. As PM Modi aptly reminded the world at the AI Action Summit, as AI writes the code for humanity, we, humans, must hold the key to shaping its future responsibly.

GOVT. LAUNCHES AI KOSHA, REPOSITORY OF DATA TO BUILD MODELS AND TOOLS

The Union government on Thursday launched AI Kosha, a platform with datasets that is being touted as a home for non-personal data that will assist with developing artificial intelligence models and tools. At launch, the platform contains 316 datasets, the bulk of these being programmes to help in creating or validating language translation tools for Indian languages.

The IndiaAI Datasets Platform is one of the seven pillars of the IndiaAI Mission, the Union government's main state-backed AI effort. The Mission has an outlay of ₹10,370 crore, and last month the Centre announced that under its Compute Capacity pillar, start-ups and academia would be able to use pooled access to graphics processing units (GPUs), which are needed to train and run AI models. Other than translation, the limited datasets include submissions from Telangana's own open data initiative, such as health data; 2011 Census data; satellite imagery captured by Indian satellites; meteorological and pollution data; and so on.

More GPUs

Information Technology Minister Ashwini Vaishnaw said while announcing the AI Kosha platform that 14,000 GPUs had been commissioned for shared access, as against nearly 10,000 when announced earlier this year. More GPUs will be added on a quarterly basis, Mr. Vaishnaw said.

The Minister provided an update on the government-supported effort to create a homegrown foundational AI model, an aim that has gained urgency following the success of DeepSeek, the Chinese firm that was able to train and launch such a model at a fraction of the cost that American firms such as OpenAI and Google had to spend. "Now, the team is actually inundated with how to evaluate these applications," Mr. Vaishnaw said, indicating a high level of interest from start-ups to build such a foundational model for India.

Government datasets

This is not the first time the Union government has sought to aggregate public data to nudge other entities to leverage it. The government's Open Governance Data platform (data.gov.in) currently hosts over 12,000 datasets provided by different government agencies across India. The government has designated "Chief Data Officers" across Ministries and departments, encouraging them to provide datasets that can be used by researchers, companies, and other parts of the government.

In 2018, the government constituted a committee to explore the possibility of compelling firms to provide start-ups and government access to non-personal data, such as traffic data from ride-sharing apps, to help new entrants and assist government policy. The committee, led by Infosys co-founder Kris Gopalakrishnan, submitted its report in 2020. However, the proposals faced pushback from the tech industry, as private players were reluctant to share their data with other parties. The conversation within the government around non-personal data from private firms took place largely before the advent of large language models (LLMs) such as ChatGPT.

NOT BUSINESS AS USUAL

The pharmacy of the global South is facing a crisis of reputation. After cough syrups made by pharmaceutical companies based in India, which had unacceptable amounts of diethylene glycol and/or ethylene glycol, killed 66 children in Gambia, 65 children in Uzbekistan in 2022, and 12 children in Cameroon in 2023, and India-made eye drops contaminated by drug-resistant bacteria

killed three persons and blinded eight in the U.S., again in 2023, the spotlight is back on Indian drug companies for all the wrong reasons. A BBC Eye investigation has brought to light the criminal actions of Aveo Pharmaceuticals, a Maharashtra-based company, which was manufacturing and exporting unapproved, highly addictive opioid drug combinations to West Africa. The "medicines" contain tapentadol, a powerful opioid, and carisoprodol, a highly addictive muscle relaxant. While the Indian drug regulator has approved tapentadol and carisoprodol as standalone drugs, the combination has no clearance. Even if the company's claim that the drug combination has been approved by the State drug authority turns out to be correct, it is still illegal as only the Central Drugs Standard Control Organization (CDSCO) can approve any novel fixed dose combination (FDC) drugs for safety and efficacy. It is only after this approval that State drug authorities can issue a manufacturing licence. The Health Ministry routinely banning FDCs is only because the State drug authorities ignore this provision in the law with impunity.

India questioned and denied the World Health Organization's report about the lethal cough syrup sent to Gambia, but in the latest case, CDSCO and the State regulatory authority swung into action even in the absence of any complaint by West African countries. The reason: the BBC investigation's irrefutable video evidence that the company was in the "business" of manufacturing and exporting the dangerous combination drug despite knowing the harmful effects. The seizure of nearly 13 million "medicines" and 26 batches of active pharmaceutical ingredients of tapentadol and carisoprodol are clinching evidence for taking criminal action against the company. While the moves by the authorities — to issue a ' stop activity' order, withdraw the manufacturing licence and permission to export the drugs by any company, and a show cause notice — inspire some confidence, only stringent punishment can serve as a deterrent. Indian pharmaceutical companies are known in the global South for their high-quality generic drugs. It is for the drug regulator to ensure that India continues to be famous for this and not gain notoriety for producing and exporting deadly synthetic opioids as drugs. Manufacturing synthetic opioid drugs cannot be any pharmaceutical company's "business".

WARRIORS OF HOPE

When an acronym was coined to refer to a newly-created cadre of health workers for the country, as political gestures are wont to, care was taken to ensure the word invoked a sense of promise. The government decided to call them Accredited Social Health Activists (ASHA in Hindi means hope). In 2005, the Centre launched the National Rural Health Mission, and nominated ASHAs to be the link between the community and the public health-care delivery system. Today, there are over a million ASHAs across the country, and each one is firmly ensconced as the fulcrum of public health care in their area of operation in rural India. They now perform a full complement of functions: record birth and death data, implement interventions in non-communicable diseases and communicable diseases, neglected tropical diseases; and serve a crucial reproductive, maternal, new born, child and adolescent health role, among others. Monitoring health, hygiene and sanitation in the community is also upon them. The role that the ASHAs played during the COVID-19 pandemic as health-care workers trusted by the community raised their profile significantly, and the humble Indian health worker went global. The ASHAs were chosen for the WHO Director-General's Global Health Leaders Award in 2022, and were recognised for their 'outstanding contribution towards protecting and promoting health'. A recent PLOS Global Public Health study established that the likelihood women access maternal services, and have a safer, institution-based delivery, goes up by 1.6 times if they were connected with ASHAs.

And yet, 20 years after the ASHAs were created, the workers are still on the streets, protesting for fair wages and equitable treatment. The flaw lies in the way they were designated at the inception — as volunteers. As such, they remain eligible only for a meagre fixed salary from the Centre and the rest of the compensation provided as incentive (shared by the Centre and States) against a deliverable, for instance, for facilitating an institutional birth. As per estimates, an ASHA worker can make anything between ₹5,000 and ₹15,000 a month. In 2018, the government approved an ASHA benefit package, providing coverage for accidents, deaths and disability. But the truth is there is a heavy load on the ASHAs; they work long hours, travel long distances, frequently miss meals, and have little time to take care of their own health needs. It is high time that the government fulfils the hopes of its warriors of hope, and treats ASHAs as permanent employees, instead of as volunteers, to enable them to draw adequate compensation and emoluments comparable to what is given to government employees.

'CANCER-RELATED MORTALITIES INCREASED FASTER AMONG WOMEN IN THE PAST DECADE'

Approximately three out of every five individuals in India die following a cancer diagnosis. Additionally, cancer-related mortalities have increased faster among women (1.2%-4.4% annual percentage change) than men (1.2%-2.4%) over the past decade, and are expected to rise, found an analysis by the Indian Council of Medical Research (ICMR) based on figures presented by the Global Cancer Observatory (GLOBOCAN), 2022 estimates.

GLOBOCAN is an online database providing global cancer statistics and estimates of incidence and mortality in 185 countries for 36 types of cancer, and for all cancer sites combined. The analysis notes that in India, childhood and reproductive age group individuals bear the lowest risk of developing and dying (0.08%-1.3%) from cancer, compared with their middle-aged and geriatric counterparts.

A THIRD OF INDIA WILL BE OBESE BY 2050: LANCET

The obesity epidemic just got bigger with a new Lancet study predicting that 21.8 crore men and 23.1 crore women in India will be overweight or obese — totalling up to 44.9 crore or nearly a third of the country's projected population — by 2050. Globally, more than half of all adults and a third of children and adolescents will become overweight or obese by 2050, the study says.

— Worryingly, prevalence of obesity will shoot up among older adolescents — or those between the ages of 15 and 24. Among young men, the prevalence of overweight or obesity increased from 0.4 crore in 1990, to 1.68 crore in 2021, and is projected to increase to 2.27 crores by 2050.

— Among young women, this number has increased from 0.33 crore in 1990, 1.3 crore in 2021, and is projected to go up to 1.69 crore in 2050. India topped the chart in this category in terms of absolute numbers in 2021, surpassing China and the United States who were ahead in 1990.

— This projected increase is concerning considering that half of the world's obese and overweight adults lived in eight countries, including India, in 2021.

— The study says that increasing prevalence of obesity in low and middle income countries — combined with persistent childhood malnutrition and pervasive infectious diseases — can cripple healthcare systems with an added burden of disease.

— The study goes on to say that childhood undernutrition also triggers adaptations such as accumulation of energy in fat tissues leading to obesity in adulthood. This increases the risk of early onset of a host of lifestyle disorders such as Type 2 diabetes, cardiovascular diseases and certain cancers.

— One of the key reasons driving the obesity epidemic is the increase in consumption of processed foods high in salt, sugar and fat. "Multinational food and beverage corporations and fast-food chains are shifting their investments from high income countries to low and middle income countries… Between 2009 and 2019, the largest annual growth in ultra-processed food and beverage sales per capita was observed in Cameroon, India, and Vietnam," the study said.

— The study says that current policies are unlikely to halt the tide of the obesity epidemic because only 40 per cent of the countries had an operational policy, strategy or action plan to address it.

— "Obesity must be officially recognized as a major non-communicable disease (NCD) and its prevention and management should be integrated into India's public health policies…" says Dr Bhasker.

Do You Know:

— The standard method of determining obesity across the world has thus far employed BMI cut-offs as the sole determinant.

— A person with a BMI of less than 18.5 is considered to be underweight, a BMI between 18.5 and 24.9 is considered to be normal, those with BMI between 25 and 29.9 are considered to be overweight, while those with BMI over 30 are considered to be obese.

— BMI is calculated by dividing a person's body mass (weight) in kilograms by the square of their height measured in metres. For instance, a person weighing 70 kg and having a height of 1.75 cm (roughly 5 feet 9 inches) has a BMI of 22.86, which falls in the healthy range, according to the definition followed thus far.

— Relying solely on BMI cut-offs leads to both over- and under-diagnosis of obesity. Lancent Commission has proposed to redefine obesity.

— The Lancet Commission defines clinical obesity as a chronic illness that results in alteration in organ functions regardless of other conditions a person might have. "It can lead to life-altering or life-threatening complications," the Commission states.

— The new definition broadens the meaning of obesity to take into account a number of physical parameters such as height, weight, and waist circumference, as well as things such as muscle mass, and the functioning of various organs.

PASHU AUSHADHI INITIATIVE FOR HEALTH OF LIVESTOCK

The government will open "Pashu Aushadhi" stores across the country to provide affordable generic veterinary medicines to people engaged in animal husbandry and dairying.

• The Pashu Aushadhi initiative has been conceptualised on the lines of the existing Pradhan Mantri Bharatiya Janaushadhi Kendras (PMBJK), which provide "quality generic medicines at affordable prices" to people in order to "bring down the healthcare budget of every citizen of India".

• More than 10,300 PMBJKs are currently functional across the country, according to the Department of Pharmaceuticals under the Ministry of Chemicals and Fertilisers. India will celebrate Janaushadhi Diwas on March 7.

• "Generic medicines" are basically non-branded drugs, which are marketed under a non-proprietary or approved name rather than a proprietary or brand name.

• While the PMBJKs provide medicines for humans, Pashu Aushadhi Kendras will provide generic medicines for animals.

Do You Know:

• The Pashu Aushadhi initiative is part of the revised Livestock Health and Disease Control Programme (LHDCP), which was approved by the Union Cabinet chaired by Prime Minister Narendra Modi on Wednesday (March 5).

• LHDCP has an overall outlay of Rs 3,880 crore for the years 2024-25 and 2025-26. Of this, Rs 75 crore have been provided for "good quality and affordable generic veterinary medicine and incentive for sale of medicines under" the Pashu Aushadhi component.

• As per the 20th Livestock Census, India's Livestock population stood at 535.78 million in 2019. This included a total bovine population (including cattle, buffalo, mithun and yak) of 302.79 million.

• The Pashu Aushadhi stores will be run by cooperative societies and Pradhan Mantri Kisan Samriddhi Kendras (PMKSK). The Department of Animal Husbandry & Dairying will soon release guidelines for the functioning of these stores, a source said.

LIVING WITH ANIMALS – THE CHALLENGES AND THE SOLUTION

At a meeting of the National Board for Wildlife (NBW) on Monday, Prime Minister Narendra Modi flagged a difficult challenge and announced a solution. The PM, the Board's ex-officio chairperson, spoke of setting up a centre for the effective management of human-wildlife conflict. Infrastructure projects and expansion of farmlands have led to the fragmentation of animal habitats, forcing tigers, lions, leopards, rhinos and elephants to venture out of national parks and sanctuaries. At the same time, some of the country's protected areas (PAs) are finding it difficult to satisfy the needs of animals for food, water and mates. However, carrying capacity remains a poorly understood concept in wildlife policy. The success of conservation initiatives continues to be measured in terms of increasing the population of the endangered animals. This approach has, no doubt, brought several animals back from the brink of extinction. Now, the country's wildlife policy needs to address the follow-up question — what to do when animals compete with humans for space and natural resources.

The NBW has approved Rs 2,900 crore for conservation works under Project Lion. The animal's conservation arc is a good indicator of what is right and wrong with the country's wildlife policy. In the early years of the 20th century, the animal's numbers had dwindled to less than 20 — largely in the area that is today designated as the Gir National Park. That the last Lion Census in 2020 tallied more than 670 of these majestic animals is a tribute to the efforts of scientists and forest officials of the PA. As PM Modi rightly observed, the participation of local communities — especially the Maldhari pastoralists — played a major role in the conservation success. But the Census also carried a worrying factoid: More than 300 of Gir's official lion population lives outside

the PA's boundaries. Experts believe that the prey base at the park cannot sustain the increasing numbers of lions, who then attack livestock in nearby villages. Lions are increasingly spotted in villages, roads, even beaches. However, even as the big cats have come into conflict with humans, been run over by trains or claimed by disease, the Gujarat government has resisted translocating some of them out of the state.

At Monday's NWB meeting, PM Modi reportedly stressed the use of technologies like AI to deal with forest fires and human-wildlife conflict. It's important that science — not regional or state pride — remains the cornerstone of conservation, and in resolving some of its most difficult challenges.

RESEARCH TEAM DISCOVERS TWO MORE SPECIES OF JUMPING SPIDERS IN WILDLIFE SANCTUARY IN KERALA

A collaborative research involving the University of Kerala reported the discovery of two new species of jumping spiders belonging to the genus Epidelaxia from the Shendurney Wildlife Sanctuary in the State. This was the first time the genus had been recorded from India, extending its known range from Sri Lanka to other parts of the subcontinent.

The two new species, Epidelaxia falciformis sp. nov. and Epidelaxia palustris sp. nov., were discovered during field expeditions to Kulathupuzha in Kollam in December 2022 and April 2023.

These are distinctively characterised by their striking physical features, which include a prominent yellow triangular-shaped mark on the prosoma (the front part of the body) of females and unique traits of the copulatory organs in both males and females. Males of E. falciformis have a brown carapace with a yellow-brown stripe, while males of E. palustris feature a pale brown band along the side of their bodies. The females exhibit similar colouration, with the added feature of white orbital setae around their eyes.

Size variation

The researchers added that the species varied slightly in size, with E. falciformis measuring 4.39 mm while the E. palustris measured 4.57 mm (males) and 3.69 mm (females). These spiders were described as highly adapted to their environment, inhabiting the dense foliage of the Western Ghats. The genus was previously considered endemic to Sri Lanka.

WHAT THE FIRST-EVER COMPREHENSIVE SURVEY OF INDIA'S RIVER DOLPHINS FOUND

Prime Minister Narendra Modi on Monday (March 3) released the results of the first-ever comprehensive population estimation of riverine dolphins – Gangetic and Indus dolphins – done in India.

• The survey was conducted across the Ganga and Brahmaputra river basins between 2021 and 2023. It estimated an average of 6,324 Gangetic dolphins, ranging from 5,977 to 6,688. The survey only found three Indus River dolphins in the Indus basin, all in the Beas River in Punjab.

• The first-of-its-kind exercise provides timely estimates of the endangered aquatic mammals, which face threats from pollution, riverbed mining, low water depth, habitat damage, prey decline and climate change. Gangetic dolphins and Indus dolphins are classified as endangered and accorded the highest protection under the Wildlife Protection Act, 1972.

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Previous attempts at mapping the population have relied on vastly different methods, and so the latest number is not useful for insight on whether their numbers have changed over time, experts associated with the study told The Hindu.

• The estimation survey was done by the Wildlife Institute of India under the Union Environment Ministry between 2021 and 2023. It covered the main channels and tributaries of the Ganga and Brahmaputra rivers, as well as the Beas river in Punjab. 28 rivers were surveyed by boat, and 30 were mapped by road.

• The survey spanned 7,109 kilometres of the Ganga and its tributaries in Uttar Pradesh, Bihar, Jharkhand, West Bengal, Madhya Pradesh, and Rajasthan. A total of 1,297 kilometres of the Brahmaputra were surveyed, including its tributaries Subansiri, Kulsi, Beki, Kopili, and Barak. 101 kilometres of the Beas river were surveyed as well.

• It thus estimated an average of 3,275 dolphins on Ganga's main stem, 2,414 in its tributaries, 584 in Brahmaputra's main stem and 51 in its tributaries. In Beas, it only found 3 Indus River Dolphins, considered a separate species from the Gangetic dolphins.

• The highest number of Gangetic dolphins, 2,397, was found in Uttar Pradesh. This was followed by 2,220 in Bihar, 815 in West Bengal, 6235 in West Bengal, 162 in Jharkhand, 95 in Rajasthan and Madhya Pradesh, and three in Punjab.

Do You Know:

Unlike the counting of tigers, elephants and other land animals in the forest, counting dolphins is challenging. For one, the animals are under water and surface only sporadically to breathe. Second, unlike the tiger's stripes and the elephants' ears that can be caught on camera and used to distinguish one animal from the other, individual dolphins cannot be uniquely identified this way. For their survey, the researchers travelled by boat at a constant speed using acoustic hydrophones — essentially underwater microphones — that pick up sounds emitted by the dolphins. The animals are blind and rely on echolocation to communicate and move.

• According to the population estimation report, dolphins surface only for 1.26 seconds and dive for 107 seconds. This generates the possibility of observer error, which prevents observers from sighting all surfacing dolphins, and availability error, meaning not all dolphins surface during the counting time.

• A combination of visual and acoustic surveys is used. The acoustic survey uses multiple underwater microphones or hydrophones to capture 'dolphin clicks.' Dolphins, being functionally blind, navigate by making clicking sounds that travel through water and bounce back after hitting objects. This process is called echolocation. Hydrophones record underwater dolphin clicks to counter observer error and reliably triangulate dolphin occurrence. Since multiple hydrophones are used, they can pick up clicking sounds made by different individuals.

• Different kinds of visual surveys are used, depending on the vessel available, water depth and channel width. For deep and wide channels, the double observer method is used, where two teams positioned on different decks cover different angles around the vessel on its left and right flank. A tandem method is used for channels less than 600 metres wide and 3 metres deep, while a single boat method is used for channels with a width smaller than 300 metres and a depth lower than 2 metres.

The next survey will likely take place after four years. For the current study, many of the surveyors had to be trained in the new techniques that were required. "The major challenge to dolphins is getting entangled in fishermen's nets, but we are now studying the effect of pollution on the dolphins' habitat," Mr. Qureshi added.

WHY RECORD NUMBER OF OLIVE RIDLEYS CAME TO NEST IN ODISHA THIS YEAR

Nearly seven lakh Olive ridley turtles laid eggs at the Rushikulya 'rookery' or nesting ground in Odisha's Ganjam district during a mass nesting between February 16 and February 25. The development came after the region did not witness any mass nesting last year. In 2023, around 6.37 lakh Olive ridleys, an endangered marine species, laid eggs at the same spot.

— Olive ridley turtles (Lepidochelys olivacea) are the smallest and most abundant of all sea turtles in the world. They get their name from the olive green colour of their heart-shaped shell, and inhabit warm waters of the Pacific, Atlantic, and Indian oceans.

— Olive ridleys can grow about two feet in length, and 50 kg in weight. Scientists do not know exactly how long they live, but like other sea turtles, Olive ridleys are likely long-lived — they reach maturity around 14 years of age.

— The main reasons behind their decline include long-term collection of eggs and mass killing of adult females on nesting beaches, and unintended capture in fishing gear which can lead to drowning or cause injuries that result in death.

— These marine reptiles are best known for their unique mass nesting — also called arribada, Spanish for "arrival" — during which thousands of females come together on the same beach to lay eggs. During nesting, more than 600,000 females emerge from the waters, over a period of five to seven days, to lay eggs. They lay their eggs in conical nests which they dig with their hind flippers and are one and a half feet deep.

— While solitary nesting by Olive ridleys is known to take place in approximately 40 countries worldwide, arribada nesting occurs on only a few beaches. The coast of Odisha (where Rushikulya and Gahirmatha rookeries are situated) is the largest mass nesting site for the Olive ridley, followed by the coasts of Mexico and Costa Rica.

— The coast in Odisha typically witnesses arribada in the first quarter of every year. Experts say Rushikulya and Gahirmatha make for an ideal mass nesting site due to favourable weather conditions, warm sandy beaches, and an undisturbed coastal ecosystem.

— According to experts, a range of factors could be responsible for a large number of Olive ridleys arriving for nesting at Rushikulya this year. One could be favourable weather conditions. The second reason is the beach gradient, the slope of a beach from the top to the water's edge, which is less this year compared to previous years

Do You Know:

— "Arribada nesting is a behaviour found only in the genus Lepidochelys which includes the Kemp's ridley and olive ridley sea turtles. Although other turtles have been documented nesting in groups, no other turtles (marine or land) have been observed nesting in such mass numbers and synchrony," according to a report on the US agency National Oceanic and Atmospheric Administration's (NOAA's) website.

RENEWED FOCUS ON DWARKA: UNDERWATER EXERCISE TO UNDERSTAND THE ANCIENT CITY

Around 20 years ago, the Archaeological Survey of India (ASI) undertook a one-of-its kind exercise: An underwater exploration and excavation work to study underwater ancient remains off the Dwarka coast in Gujarat where Dwarka Nagri – the mythical Mahabharat-era city is believed to be submerged in sea for thousands of years now.

— Last month, armed with a new team led by a veteran of the 2005-07 exercise, and comprising three women, the ASI resumed the exercise off the coast of Dwarka between February 17 and 20 with the aim of understanding the archaeological importance of the city "in a better way".

— In 2006, we carried out a hydrographic (study of physical features of the sea, etc) survey. So, the large area off-Dwarka was surveyed in collaboration with the Indian Navy. We had also done a bathymetric (related to depth of a water body) study of the entire area. In 2007, excavations were done.

— Present-day Dwarka is a coastal town located at the mouth of the Gulf of Kutch, facing the Arabian Sea. The town is a part of the Krishna pilgrimage circuit, which includes Vrindavan, Mathura, Govardhan, Kurukshetra and Puri, and is home to the 13th-century Dwarkadheesh temple.

Do You Know:

— Dwarka has immense significance in Hindu culture due to its association with Lord Krishna and the Mahabharata. It is believed that after killing his uncle Kamsa, Krishna migrated from Mathura to Dwarka with his Yadava clan, and founded his kingdom here by reclaiming 12 yojana land from the sea.

— References in the Vishnu Purana suggest that Dwarka was a city of beautiful gardens, moats, ponds and palaces. The town, however, is believed to have been submerged under the sea after the death of Lord Krishna.

LEGACY OF KHUSRAU, MUSICAL FLAGBEARER OF SUFISM'S PLURALISTIC TRADITION

In his address to the 25th edition of Jahan-e-Khusrau at New Delhi's Sunder Nursery on Friday, Prime Minister Narendra Modi described the annual music festival that commemorates the Sufi poet-musician Amir Khusrau as imbued with the "fragrance of the soil of Hindustan".

— Bestowed with the sobriquet of Tuti-yi-Hind, the 'Parrot of India', the 13th century mystic is seen as a father figure for North India's syncretic Ganga-Jamuni culture. Khusrau made lasting contributions to Indian classical music, Sufi qawwali, and Persian literature, and is also credited for developing Hindavi, a precursor to modern Hindi and Urdu.

— Khusrau's father likely came to India from Central Asia in the early 13th century, as the Mongol hordes of Genghis Khan ravaged Islamic Transoxiana (corresponding to parts of modern-day Uzbekistan, Tajikistan, southern Kazakhstan, Turkmenistan and Kyrgyzstan).

— He entered the service of Sultan Iltutmish (1211-36), and married the daughter of an Indian Muslim. The couple's second child, Abu'l Hasan Yamin ud-Din Khusrau, was born in 1253.

— Khusrau became a professional poet at age 20, and served as one until his death. He started out in the service of princes and nobles, before becoming a permanent fixture in the court of the Delhi Sultan. Sultan Jalaluddin Khalji bestowed upon Khusrau the title of 'Amir'.

— Amir Khusrau served at least five Sultans — Muiz ud din Qaiqabad, Jalaluddin Khalji, Alauddin Khalji, Qutbuddin Mubarak Shah, and Ghiyasuddin Tughlaq — and many other powerful patrons over five decades, which testifies to the quality of his poetry. He wrote in Persian, the language of the court, as well as Hindavi.

— Khusrau was the most beloved disciple of the Chishti Shaikh Nizamuddin Auliya, who once wished that his favourite pupil would be buried with him.

— Khusrau's ghazals and qawwalis are today sung in both sacred and secular contexts, at sufi dargahs and Bollywood musicals. His most popular compositions include Chhaap Tilak, Zehal-e-Maskeen, and Sakal Ban Phool Rahi Sarson.

— However, his musical contributions likely go farther than this. Khusrau is said to be instrumental in the development of modern Indian classical music — he is credited with crafting dozens of ragas, creating ornate khayal music, and inventing the sitar and tabla, even though evidence for this is limited.

Do You Know:

— Moinuddin was born in 1141 CE in Sistan, a province in Persia (Iran) which borders present-day Afghanistan. He is said to have been a descendent of Prophet Muhmmad.

— Sufism emerged between the seventh and 10th centuries CE as a counterweight to the increasing worldliness of the expanding Muslim community. Sufis embraced a more ascetic and devotional form of Islam, and often engaged in a variety of mystical practices. Eventually, Sufi practitioners came to be organised in various orders which congregated around the teachings of a certain teacher or wali.

— The Chishti order was founded in the 10th century by Abu Ishaq Shami in the town of Chisht near Herat. But it was Moinuddin and his disciples who led to its spread in the subcontinent.

— Among his most prominent disciples was Qutbuddin Bakhtiyar Kaki (1173-1235), who established the Chishti order base in Delhi. Kaki became a central figure in the region's spiritual life as the spiritual guru of Iltutmish, the third Sultan of Delhi. The Qutub Minar is said to be named after Kaki, whose shrine lies in Mehrauli, next to the iconic structure.

HOW 'CHHAAVA' ERASES HISTORY AND LEAVES NO ROOM FOR COMPLEXITY

After watching the latest Bollywood blockbuster Chhaava, a viewer in Gujarat tore the cinema screen angered by the torture inflicted by Aurangzeb on Sambhaji. Multiple videos of viewers, including children, crying and shouting slogans, after watching the film, have been circulating on social media. Any film that devotes the final 40 of a total 136 minutes, to a brutal depiction of torture is already suspect with its sense of aesthetics.

Chhaava does have the laudable goal of setting the historical record straight about Sambhaji as a great warrior and administrator against biased accounts. But it becomes harmful national-level propaganda when it is fixated on the good Hindu versus the bad Muslim binary, skips some incontrovertible facts, and is in complete sync with the ruling party's ideology. Thus, it joins the

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cohort of over 20 blatant propaganda films made recently such as The Kashmir Files, The Kerala Story, The Vaccine War, Article 370, Bastar – The Naxal Story, Swatantrya Veer Savarkar, JNU: Jahangir National University, The Sabarmati Report and Samrat Prithviraj. And Chhaava, like some others, was endorsed by the Prime Minister and other Ministers, and made tax-free in certain BJP-ruled States.

Hindu vs Muslim binary

Chhaava's world is one in which the relentless quest to expose the evilness of the Muslim Aurangzeb makes it omit that he came to power on the basis of support from the Rajputs; that his administration had the highest percentage of Hindu Mansabdars in Mughal history (33%); that it also had Hindus in the posts of the Dewan and as heads of two important provinces; and that the emperor who imposed the Jizya (but exempted it for Brahmins, Rajputs, women, the elderly, etc.) protected some temples just as he demolished others, according to some historians.

This, of course, does not make Aurangzeb tolerant, only that his orthodoxy had to accommodate political pragmatism. While secularist historians emphasise this political pragmatism, Samira Sheikh shows how Aurangzeb's Sunni bigotry arguably persecuted Shia and other Islamic millenarian groups such as the Mahdavis, Dawoodi Bohras and Sufis more than the Hindus. This persecution had an economic side too — the rising prosperity of these "heretic" groups drew the ire of Aurangzeb's Sunni clerics who had business motives as well.

Of course, these complexities/debates cannot be a part of Chhaava's world in which the quest for Maratha "Swaraj" under Sambhaji is suffused with Hindu imagery and is presented as liberating India from "foreign rule." Actually, the Mughals had already lived in India for over 150 years then. Historian Stewart Gordon argues that Chhatrapati Shivaji, who championed tolerance and syncretism, and who had beseeched Aurangzeb to follow Akbar's tolerance, was not advocating nationalism or the cause of a "universal Hindu rule." Shivaji, too, had a substantial number of Muslims in his administration, including top military commanders.

No room for nuance

Chhaava's world of Hindus versus Muslims/Indians versus foreigners is far from the real 17th century in which there were multiple states and emerging European powers, with various cross-cutting alliances and rivalries between them. A strong coastal power was the Sidis of Janjira, who were African Muslims, while the Peshwa of the Ahmadnagar Sultanate for 26 years was the legendary military general Malik Ambar, an Ethiopian slave. Shivaji (and his father) were a part of the Adil Shahi rule of Bijapur. Even when he rebelled and carved out his own kingdom, he allied with them, the Qutb Shahis of Golconda and even the Mughals, and sometimes against Hindu kingdoms like the Nayaks of the Karnatic. Similarly, Sambhaji, too, allied with Muslim Sultanates against Hindu kings like Chikka Devaraja of Mysore.

Chhaava's central narrative of Aurangzeb's evilness would be diluted of its shock value if the film showed that Sambhaji himself had rebelled against his father Shivaji and had briefly joined the same evil Aurangzeb! While Chhaava, unlike other propaganda films, does show aberrations in the 'good Hindus' narrative by showing some Hindu traitors, including in his own family, all the kohl-lined Muslims are universally bad.

In positing Aurangzeb's torture as exceptional, what Chhaava's world elides is the brutal nature of the medieval world with daily wars. States, including the Marathas, were built through consolidation, as well as through the violent subjugation of Hindu (and Muslim) landed nobles

(deshmukhs, jagirdars, etc.) who were constantly shifting allegiances between states for better material/symbolic benefits. Internecine conflict between family members, just like among the Mughals, was rife: Shivaji battled his half-brother Ekoji, and so did Sambhaji's son with other contenders. When the film shows the failed plot to poison Sambhaji on behalf of his half-brother Rajaram, where 20 key Maratha ministers and elites are executed, it only hints at the violence by the trampling of elephants. When Sambhaji's Marathas attack Goa, a Portuguese account (cited by historian Jadunath Sarkar) says, "up to now nowhere else in India has such barbarity been seen…" While such narratives have to be treated carefully, what it shows was that violence was pervasive, even if degrees varied.

Ignoring caste

Critically, Chhaava's Hindu-Muslim binary glosses over caste. It was the lowest castes and the poor who faced the worst forms of oppression across Hindu and Muslim states. In the 1818 Battle of Koregaon, the East India Company forces, with the Dalit Mahars in it, defeated the Peshwa-led Maratha confederacy. It became a symbol of caste resistance for Ambedkar and the Dalits. The film is also ironical considering that the Maharashtra non-Brahman movement had contended for long that the demonisation of Sambhaji as weak, incompetent and morally deficient was perpetuated by Brahmin narratives. This was also repeated by Hindutva ideologues like Savarkar and Golwalkar. The film has led to new Maratha versus Brahmin sentiments.

The world of Chhaava, like many other propaganda history films, is governed by present-day predilections in which a majoritarian nationalism is rampant, with the national audience further reinforcing it. When history in cinema becomes merely a tool to evoke anger, disgust and hatred, it robs us from understanding history in all its complexity. When history textbooks are being rewritten, and when people read history mostly through WhatsApp forwards, films like Chhaava with their erasures portend a dangerous tendency.

SHORT NEWS

SUPREME COURT: TIME TO CONSIDER RIGHT AGAINST DISABILITY-BASED BIAS A FUNDAMENTAL RIGHT

THE Supreme Court on Monday said the time has come to consider the right against disability-based discrimination a fundamental right, as it ruled that "visually impaired candidates are eligible to participate in selection for the posts under the judicial service".

WHY ARE INDIA, CHINA, US RACING TO SECURE SUPPLIES OF COPPER?

On February 27, the government announced the securing of a 9,000-sq-km block to explore copper and cobalt in a region in Zambia known for high-grade deposits. With production in domestic mines faltering, the project is a crucial step for India to establish overseas mining operations.

A REPORT RETHINKS QUOTAS, 'AFFIRMATIVE ACTION' FOR MUSLIMS, HIGHLIGHTS THEIR 'LOST POLITICAL RELEVANCE'

Sub-categorisation of the OBC reservation category to include Muslims, bringing in Dalit Muslims and Christians under the Scheduled Caste (SC) quota, and a revaluation of the existing 50% ceiling on reservation "on a rational basis".

These are among the key suggestions of a report titled "Rethinking Affirmative Action for Muslims in Contemporary India" that was released on February 5 by the Centre for Development Policy and Practice (CDPP) in collaboration with the US-India Policy Institute.

MIYAWAKI TECHNIQUE

— The Uttar Pradesh government employed the Miyawaki technique during the beautification and cleanliness initiatives during the Mahakumbh festival.

— Japanese botanist Akira Miyawaki devised the Miyawaki technique in the 1970s, aimed at restoring the native forests in Japan that deteriorated due to urban development over time.

— He drew inspiration from Japan's age-old sacred shrine forests ("Chinju no Mori"), which were traditionally developed around Shinto shrines.

— The Miyawaki technique involves planting a large number of native plants and saplings in a small area to create an ecosystem that mimics a forest. The soil structure and quality must match the conditions of the natural environment of those plants and be amenable to the local climate.

— The saplings or seeds are planted at a high density, usually 3-5 plants per square meter, for achieving rapid growth. The seeds of multiple varieties are planted randomly and not in neat rows to mimic a forest.

— Because the plants are so close together, they shoot up quickly, competing for sunlight. Thus, they grow to their full length within three years, compared to the much longer periods natural forests take.

POWER HEAD TEST ARTICLE (PHTA)

— The Indian Space Research Organisation (ISRO) recently successfully conducted the PHTA and the first hardware test for the development of semi-cryo engines.

— PHTA is a significant precursor test done to validate the integrated performance of some of the engine's critical subsystems, such as the gas generator, turbo pumps, pre-burner and control components. The test involves performing a hot-firing for an extremely brief duration of not more than 4.5 seconds.

— The cryogenic engine uses liquid oxygen and liquid hydrogen. Handling liquid hydrogen is challenging, given that it needs to be stored at minus 253 degrees Celius and it is highly inflammable.

— Whereas a semi-cryogenic engine uses a liquid oxygen – kerosene combination, where kerosene is readily storable; this combination offers advantages like high-density impulse (with respect to cryogenic), less toxic (with respect to storage) and cost-effectiveness.

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VANUATU

— Fugitive former IPL chief Lalit Modi has applied to surrender his passport to the Indian High Commission in London and acquired the citizenship of Vanuatu.

— Vanuatu provides citizenship by investment (CBI) or "golden passport" program, which allows wealthy individuals to effectively purchase their passports.

— Vanuatu, comprising 83 fairly small volcanic islands, of which only 65 are inhabited, lies to the east of Australia and the north of New Zealand in the South Pacific.

— The country's capital Port Vila lies on the island of Efate, the third largest in Vanuatu with an area of nearly 900 sq km. Port Vila is also the largest city in Vanuatu.

HANTAVIRUS PULMONARY SYNDROME (HPS):

Hantavirus is a family of rodent-borne viruses that can cause serious illness and death in humans. Infected rodents spread the viruses through their urine, faeces, and saliva. HPS is endemic to the Western Hemisphere. The most common HPS-causing hantavirus is carried by the deer mouse. There is no known cure or treatment for HPS.

BUSINESS & ECONOMICS

TRUMP MAY EXCLUDE GOVT. SPENDING FROM GDP MATH

Commerce Secretary Howard Lutnick said Sunday that government spending could be separated from gross domestic product reports, in response to questions about whether the spending cuts pushed by Elon Musk's Department of Government Efficiency could possibly cause an economic downturn.

"You know that governments historically have messed with GDP," Mr. Lutnick said on Fox News. "They count government spending as part of GDP. So I'm going to separate those two and make it transparent."

Doing so could potentially complicate or distort a fundamental measure of the U.S. economy's health. Government spending is traditionally included in the GDP because changes in taxes, spending, deficits and regulations by the government can impact the path of overall growth. GDP reports already include extensive details on government spending, offering a level of transparency.

Mr. Musk's efforts to downsize federal agencies could result in the layoffs of tens of thousands of federal workers, whose lost income could potentially reduce their spending, affecting businesses and the economy at large. The commerce secretary's remarks echoed Mr. Musk's arguments made Friday that government spending doesn't create value for the economy.

"A more accurate measure of GDP would exclude government spending," Mr. Musk wrote on his social media platform. "Otherwise, you can scale GDP artificially high by spending money on things that don't make people's lives better."

Playing it down

The argument as articulated so far by Trump administration officials appears to play down the economic benefits created by some forms of government spending that can shape an economy's trajectory.

"If the government buys a tank, that's GDP," Mr. Lutnick said Sunday. "But paying 1,000 people to think about buying a tank is not GDP. That is wasted inefficiency, wasted money. And cutting that, while it shows in GDP, we're going to get rid of that."

The Commerce Department's Bureau of Economic Analysis published its most recent GDP report on Thursday, showing that the economy grew at an annual rate of 2.3% in the final three months of last year. The report makes it possible to measure the forces driving the economy, showing that the gains at the end of last year were largely driven by greater consumer spending and an upward revision to federal government spending related to defence. Still, the federal government's component of the GDP report for all of 2024 increased at 2.6%, slightly lower than overall economic growth last year of 2.8%.

In the GDP report, government spending accounts for almost one-fifth of people's personal income, which totaled more than $24.6 trillion last year. This includes Social Security payments.

THE WIDER IMPLICATIONS OF TRUMP'S ECONOMIC AND TRADE POLICIES

U.S. President Donald Trump's economic and tariff policies and measures to secure his country's borders may seem justified in terms of promoting his nation's interests. But they have wider ramifications not only for Americans themselves, but also for the rest of the world. His tariff proposals will result in supply chain disruptions, lead to market and currency volatility, disrupt capital and trade flows, contribute to inflation and cause a decline in world trade and economic growth, worsening the plight of the poor, especially in developing economies.

The essence of Mr. Trump's economic and trade policies can be summarised as follows:

a) cut down the size of his nation's public debt,

b) improve his country's trade balance with its major trading partners,

c) woo businesses to relocate or to invest in the domestic economy through a policy of carrot and stick,

d) make the American economy efficient by reducing its fiscal deficit, which involves cutting the size of its bureaucracy and eliminating unwanted expenditure on international aid, and

e) improve the competitiveness of American products through innovation, technology infusion and through lower prices of energy.
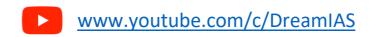
Tariff as a weapon

For the first time in history, customs tariffs are being used as a weapon to achieve both geopolitical and economic objectives and in so doing, Mr. Trump is signalling to the rest of the world that the era of globalisation and free trade, which culminated in the birth of the World Trade Organisation (WTO) in 1995 after years of global consultations and negotiations, is practically dead and a new set of global trade rules based on equality and reciprocity need to be evolved in its place.

The WTO recognised the differences in the level of economic and industrial development of the member nations to permit some privileges (the Most Favoured Nation clause) and the right to protect domestic agriculture and industry from foreign competition through protectionist barriers for emerging economies. Now, by demanding equal market access and reciprocity in import taxation, Mr. Trump is not only disrupting global trade relations and global supply chains, evolved over years of intense negotiations, but also equating poorer countries which depend on mono-product exports with the rich industrialised countries.

For example, mono-crop countries like Chad, Ivory Coast and Western African Union which only grow and export cotton, cannot survive without some protection for their domestic cotton growers.

Now coming to Mr. Trump's tariff wars with his trading partners, some seem to have capitulated to his demands of lower tariffs by voluntarily reducing import tariffs across the board, like the recent measures announced by India in its Annual Budget for 2025-26 in the form of customs duty cuts for various imported products, especially the cut in import tariffs for luxury and second-hand cars priced over $40,000 and Harley Davidson motorbikes above 1600cc, from 125% and 50%, respectively, to 70% and 30% now.

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EU tariff parity

The EU has also agreed to achieve parity with the U.S. on import tariffs on automobiles (a reduction from 10% earlier to 2.5% now, which is the tariff America levies on European cars), while at the same time threatening to reciprocate if the U.S. imposed additional tariffs of 25% on other European products. The U.S. however went ahead and announced 25% import taxes on steel and aluminium, which some believe will adversely affect car manufacturing and push up the domestic prices of automobiles in the U.S., hurting German car companies more than anyone else.

There is also a belief that China will dump its steel and aluminium products in India and other emerging economies to avoid the U.S. markets due to its steep tariffs, which will hurt domestic steel and aluminium manufacturers in India. Mr. Trump is just a few weeks into his Presidency and his pronouncements on economic and trade measures have already rattled the markets and plunged many national currencies to their lowest levels against the dollar.

Mr. Trump's tariff announcements also have a potential to disrupt global supply chains and have a negative impact on not just his trading partners, but a whole lot of other countries which are indirectly connected to U.S. trade through its trading partners.

For example, the mobile phones, laptops, personal computers, television sets which are exported to the U.S. from China may have components and accessories that are manufactured and supplied by other South-East Asian countries like South Korea, Vietnam, Thailand, Malaysia, etc., whose export earnings may also suffer along with those of China. Similarly, the 25% tariffs slapped on Canada and Mexico is going to impact Japanese and South Korean car manufacturers who have manufacturing or assembling plants in these countries and have established reliable supply chains within their immediate neighbourhoods and with their own trading partners.

INVESTORS SPY THE DAWN OF A TECTONIC SHIFT AWAY FROM U.S. MARKETS

A historic global trade war, a proposed $1.2 trillion European fiscal bazooka and the emergence of China as tech race leader are upending global flows of money, marking a potential turning point for investor capital away from the United States.

China unlocked more stimulus on Wednesday and promised greater efforts to cushion the impact of an escalating U.S. trade war. Hours earlier, Germany's likely next government agreed on the biggest overhaul to fiscal policy since the country's reunification. In response, German bonds cratered in the most dramatic sell-off in decades, as 30-year yields shot up by a quarter of a percentage point on Wednesday.

Meanwhile, U.S. economic data points to a weakening, and the trade war unleashed by U.S. tariffs that kicked in this week is hurting sentiment inside and outside the world's biggest economy.

For most of the last three years, investors had bet on "U.S. exceptionalism," with the country ahead of others in economic growth, stock prices, artificial intelligence and other areas.

"The world now sees the U.S. model is changing, and saying—we need to adapt to that, the U.S. is no longer as reliable as a trade partner, we have to take care of our own needs on defence," Tim Graf, head of macro strategy for EMEA at State Street Global Markets, said.

The change in sentiment has fuelled a rare divergence in global stock markets.

While the S&P 500 stock index is down 1.8% this year, European shares are up almost 9% at a record high, and tech stocks in Hong Kong have surged almost 30%.

The euro shot to a four-month high above $1.07 and a number of banks have raced to ditch their recent calls for a drop to parity against the dollar.

Investors have chopped their bullish bets on the dollar in half to around $16 billion since U.S. President Donald Trump's inauguration in January.

"Go back to December, this overwhelming consensus about U.S. exceptionalism, and U.S. was the only place to invest," said Dario Perkins, managing director of global macro at TS Lombard. "What's really happened here is this threat of tariffs and the aggressiveness of Trump is forcing other countries to spend more."

In his first 44 days in office, Mr. Trump has ripped up the playbook on foreign relations in place since 1945, launched a global trade war by slapping tariffs on his country's largest trading partners and forced European leaders to drastically rethink how they fund their own security.

Tariffs and trade uncertainty are causing the U.S. economy to lose steam, and companies more vulnerable to slower growth are starting to show the cracks. An index of U.S. banks has lost 8% in the last month, while its European equivalent has jumped 15%. Investors have poured money into Europe to diversify away from the U.S. market.

Spending big

With Europe and China poised to spend big, the dollar is looking less appealing.

"We had been long the dollar against the euro and closed that position over a week ago. It had lost impetus," Mark Dowding, chief investment officer at RBC's BlueBay fixed income team, said. "The behaviour of Trump has diminished the appeal for U.S. assets in general."

After investors dumped Chinese assets last year, as the economy slowed and affluent consumers were closing their wallets, the government took several steps to encourage domestic spending. But many still viewed China as uninvestable in the absence of a jumbo stimulus plan as strains lingered from a real-estate bubble that burst, hitting companies and homeowners.

Almost uninterrupted outflows from China-focused funds after Mr. Trump's election win in November reversed in early February, drawing in some $3 billion since then, according to Lipper data.

One of the great U.S. stock market draws has been its megacap tech shares. Nvidia, in particular, has become the poster-child of the AI investment revolution and one of the world's most valuable companies.

There was little evidence to suggest any serious challenge to the dominance of Wall Street in the AI arms race until late January, when a previously unknown low-cost Chinese AI model burst onto the scene. The emergence of DeepSeek not only shattered assumptions about the cost and efficiency of the race to build out AI, but of how close behind the West China really was.

Yang Tingwu, vice general manager of asset manager Tongheng Investment, said China's stock market is already immune to higher U.S. tariffs as the country's growing strength is underpinning

domestic assets. "If you look at TikTok, Xiaohongshu or DeepSeek, China's technological clout is expanding," Mr. Yang said.

American users have been rapidly moving to Xiaohongshu, a Chinese social media platform, in response to the impending sale of rival TikTok's U.S. operations.

Still, for some, a resilient U.S. economy and relatively higher interest rates will see the dollar retain its appeal over time.

U.S. MOVE LIFTS CRYPTOS, INDIAN FIRMS FOR 'PROGRESSIVE' POLICIES

U.S. President Donald Trump, on Sunday, announced the creation of a 'Strategic Crypto Reserve' aimed at positioning the U.S. as the 'crypto capital of the world.' In just 24 hours, nearly $315 million in Bitcoin shorts were liquidated, and over $330 billion flowed into the crypto market.

ADA (Cardano) surged 70%, XRP 40% and Bitcoin 10% in a single day.

The U.S. initiative, which will include major cryptocurrencies such as Bitcoin, Ethereum, XRP, Solana and Cardano, has sparked a significant rally in digital asset prices, signalling a new era of institutional acceptance and regulatory clarity for the crypto industry. Industry leaders in India are calling for progressive policies to harness this momentum.

Industry reacts

Sumit Gupta, co-founder, of CoinDCX, said, "[Mr.] Trump's announcements, starting with the creation of a Strategic Crypto Reserve, followed by hosting the first-ever White House Crypto Summit, has truly energised the industry.

"These moves represent a fundamental, era-defining shift, positioning the U.S. at the forefront of the global crypto landscape." The U.S. initiatives have set a new global standard for how digital assets should be viewed, presenting a significant opportunity for countries to adopt progressive policies to drive growth in the crypto space, he said.

India's involvement

Policy-wise, nations with high cryptocurrency adoption like India, are likely to reconsider their stance on cryptocurrencies.

CoinSwitch's Singhal added that India stands at a crossroads. With its deep pool of tech talent, entrepreneurial spirit and thriving start-up ecosystem, the country has everything it takes to lead the next wave of blockchain-driven transformation.

Progressive policies

But to do so, India should embrace progressive policies, foster innovation and position itself as a hub for decentralisation, he said.

Mr. Trump also opposed a U.S. Central Bank Digital Currency (CBDC), fearing it would infringe on financial freedom.

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Risky move

He said that while supporters see it as a step toward legitimising digital assets, critics warn about the risks of government involvement in crypto markets.

"The future of this plan remains uncertain, with significant political and regulatory challenges ahead," he added.

TRUMP'S TARIFF REGIME IS CAUSING TURMOIL. WHAT SHOULD INDIA DO?

The tariffs that US President Donald Trump announced early last month — 10 per cent on Chinese and 25 per cent on Canadian and Mexican goods — have led to a full-blown trade war. China has hit back with 15 per cent duty on wheat, corn, cotton and chicken and 10 per cent on soyabean, pork, beef, fruit, vegetables and dairy products from the US. These tariffs — coming even as the Trump administration has imposed an additional 10 per cent levy on Chinese goods — are significant: China is the largest market for US soyabean and cotton, and also a big buyer of its beef, dairy, pork and poultry meat. If these agricultural products from the US now turn more expensive and Chinese importers switch to alternative suppliers — such as Brazil, Argentina and Paraguay in soyabean — the loser would be the American farmer. Trump, incidentally, won almost 78 per cent of the popular vote in the US's most farming-dependent counties during the 2024 presidential elections.

But the trade wars are not limited to China or Canada and Mexico. The blanket 25 per cent tariffs on the latter two countries' goods took effect on Tuesday, with Canada too retaliating with duties on some $155 billion worth of US imports. Trump has also announced worldwide tariffs of 25 per cent on steel and aluminium to take effect from March 12. On top of these are his proposed "reciprocal tariffs", which translates into the US charging the same duty on imports that the exporting countries levy on goods from America. That will affect virtually every country with which the US trades, both as a goods importer ($3.3 trillion in 2024) and exporter ($2.1 trillion). As the US increasingly cuts itself from imports, the result would be higher inflation, forcing the Federal Reserve to hike interest rates, which will, in turn, lead to further capital outflows from emerging market countries such as India. In short, this is a massive global disruption unfolding.

What should India do? The one thing it definitely must not do is become inward looking. This is the time when India establishes itself as a reliable global trade partner. Not only should its exporters be encouraged to explore new markets, it must also open itself more to competition from imports, including of farm produce. Cutting duties on almonds, walnuts or even corn and whiskey from the US isn't going to excessively harm Indian producers. If anything, poultry and dairy farmers will benefit from imports of a primary feed ingredient. Indian seafood and basmati rice exporters, on the other hand, would lose heavily if the US were to impose retaliatory tariffs on these products. India shouldn't be afraid to negotiate on trade and tariffs with the Trump administration.

INDIA MUST TELL U.S. TARIFFS COMPLY WITH TRADE RULES: GTRI

India's import duties are in compliance with global trade rules and the government should convey this to the U.S. administration, the Global Trade Research Initiative (GTRI), an economic think tank, said on Sunday.

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The U.S. may push India to open government procurement to American firms, reduce agricultural subsidies, weaken patent protections by allowing evergreening, and remove restrictions on data flows, it said, adding India had resisted these demands for decades and was still not prepared to accept them.

U.S. President Donald Trump, on multiple occasions, has alleged that India had high tariffs, and termed it "tariff king" and "tariff abuser".

"India's tariffs are consistent with WTO (World Trade Organization) rules. They are the result of a single undertaking at the WTO which all countries, including the U.S., approved in 1995...Indian tariffs are WTO-compliant. The Indian side needs to explain [this] to the U.S.," GTRI founder Ajay Srivastava said.

When the WTO was established in 1995, developed nations agreed to let developing countries retain higher tariffs in exchange for commitments on Trade-Related Aspects of Intellectual Property Rights (TRIPS), services trade liberalisation, and agricultural rules that primarily favoured wealthier nations. Mr. Srivastava said many developing nations argue that the commitments made under TRIPS and agriculture had disproportionately benefited developed countries, limiting their ability to industrialise.

"[U.S. President] Trump, while talking about India's high tariffs, conveniently forgets this," he added.

He also said that India's exports to America often have low local value addition and this must be considered when assessing trade balances.

INDIA, EU LOOK TO SEAL TRADE DEAL THIS YEAR, TRUMP KEEPS MARKETS REELING

At a time when both India and the European Union brace to face reciprocal tariffs from the US and the trans-Atlantic relationship is strained like never before, Prime Minister Narendra Modi and visiting President of the European Commission Ursula von der Leyen tasked their negotiators to conclude the India-EU Free Trade Agreement by end of 2025.

— Calling the engagement "historic and unparalleled...natural and organic", Modi said that it was built on shared values aimed at "shaping a better future for our planet".

— Negotiations for FTA began in 2007, and stalled some years ago, and were relaunched in 2021.

— This is the first time that there is a deadline to conclude the FTA, similar to a deadline set for the Indo-US trade deal to be concluded by Fall this year — that was agreed during Modi's meeting with Trump in the White House early this month.

— Modi and von der Leyen talked about connectivity between the two regions with the Prime Minister referring to "concrete steps" that will be taken to take forward the India-Middle East-Europe Economic Corridor or IMEEC.

— This is the first ever visit of the EU College of Commissioners together to India and the first visit outside of Europe by the new College that took office in December 2024.

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Do You Know:

— According to the EU, The European Union is a group of 27 countries in Europe. These countries came together to make things better, easier and safer for people. They agreed to work together and help each other.

— India established diplomatic relations with the European Economic Community — the first pillar of the future European Union — back in 1962. The Joint Political Statement signed in 1993 and the Cooperation Agreement of 1994 paved the way for the strengthening of ties between India and Europe.

— The multi-tier institutional architecture of cooperation has been presided over by the India-EU Summits, 15 of which have been held so far. The first Summit was held in Lisbon in June 2000, and the bilateral relationship was upgraded to a Strategic Partnership at the 5th Summit in The Hague in 2004.

— The TTC — a new frontier similar to the Initiative for Critical and Emerging Technologies with the US or the Technology Security Initiative with the United Kingdom — represents three significant pillars of India-EU cooperation: Digital and Strategic Technologies; Clean and Green Technologies; and Trade, Investments and Resilient Supply Chains.

AS US SANCTIONS HIT INDIA'S RUSSIAN OIL IMPORTS, SMALLER SUPPLIERS' CASH IN

Recent American sanctions on Russia's oil trade have started to have an impact on India's crude oil imports from Moscow, which fell to an over two-year low in February.

• To make up for the lost Russian volumes for now, Indian refiners are actively diversifying their crude oil sources by turning to relatively smaller suppliers from regions like Africa and Latin America, per vessel tracking data.

• In January, just before demitting office, the US's Joe Biden administration announced sweeping sanctions against Russia's oil trade.

• It sanctioned as many as 183 tankers—a sizable part of the so-called shadow fleet that had kept Russian oil flowing—apart from sanctioning two Russian oil majors and Russian insurance companies, among others involved in the Russian oil sector and trade.

• The sanctions have made it difficult for Indian refiners to secure enough cargoes of Moscow's crude, and they are being forced to look elsewhere to cover the gap.

• In February, India's oil imports from Russia declined 14.5 per cent month-on-month to 1.43 million barrels per day (bpd), the lowest since January 2023, shows data from commodity market analytics firm Kpler.

• Russia's share in India's oil imports declined to around 30 per cent in February, down significantly from the 2024 average of around 38 per cent.

Do You Know:

• With the exception of Iraq, which is India's second-largest supplier of crude, oil imports from the other key West Asian suppliers—Saudi Arabia and the United Arab Emirates (UAE)—declined sequentially. Oil imports from Iraq in February rose 5.5 per cent sequentially to 1.09 million bpd,

while imports from Saudi Arabia declined over 6 per cent to 679,372 bpd. India's oil imports from the UAE fell over 22 per cent in February to 342,076 bpd.

• On the other hand, oil imports from relatively smaller sources of India's oil imports, like Brazil, Nigeria, Colombia, Venezuela, Mexico, Qatar, Oman, Alegria, Republic of the Congo, Libya, and Gabon, rose in February. Some of these smaller suppliers exported oil to India after a gap of a few months. February also saw Argentina appearing on the map of India's crude oil import sources by supplying around 25,000 bpd.

• Suppliers like Gabon, Libya, Algeria and the Republic of the Congo featured on India's oil import sources list in February after being absent for varying periods. India's oil imports from these countries ranged between 35,000 bpd and 55,000 bpd in February.

WOMEN'S INVISIBLE LABOUR AND THE DREAMS OF VIKSIT BHARAT

The Time Use Survey 2024 (January-December), released by the Ministry of Statistics and Programme Implementation last week, reiterates what has long been an open secret: Despite incremental changes, women spend more time in unpaid industry at home compared to men. In 2024, women spent 289 minutes a day on unpaid domestic services, 10 minutes less than in 2019, but still 201 minutes more than men. Women also spent 62 more minutes on unpaid caregiving, averaging 137 minutes every day, up from 134 minutes in 2019. In addition, women also spent about 140 minutes a day on caregiving, compared to 75 minutes for men, with 41 per cent of women and 21.4 per cent of men aged 15-59 years participating in caregiving activities.

This gendered division of labour has a cascading effect on women's long-term economic mobility and workplace equality. The extensive hours spent on household responsibilities leave women with limited time and energy to pursue paid work. It also limits their ability to acquire additional qualifications. They are more likely to work in low-paid, part-time or informal jobs, often with fewer benefits and job security. This structural inequality exacerbates wage gaps, with women earning significantly less than men for similar work. In its report, 'The impact of care responsibilities of women's labour participation', published in October 2024, the ILO argued for investment in the country's care economy, particularly in early childhood care and education, given the fact that India has 53 per cent of women outside the labour force. Although women's participation has grown substantially – 41.7 per cent as per data from the Periodic Labour Force Survey 2023-24 — they still account for a much smaller proportion of the total labour force. Men's labour force participation rate stands at around 78 per cent.

In a country spurred by dreams of Viksit Bharat and women-led development, the repercussions of this disparity risk being both economic and social. According to a study by Karmannaya Counsel, CII and Nikore Associates, published in March 2024, women perform over eight times the amount of unpaid work, valued at 15 per cent to 17 per cent of the GDP notionally. Inclusivity will have to begin with a re-imagination of the foundation of household dynamics. Far too often, even the minimum of work done by men around the house are lauded as largesse while women are put in their place for not being the "breadwinner". Dismantling this stereotype would be a good place to begin.

MAPPING HER WORK

The latest rounds of the periodic labour force surveys show that overall employment, particularly self-employment, among rural women, has increased significantly since 2017-18. Most of these

women report being helpers in a home-based enterprise. This increase in women's time allocated to income generating work begs the question: How and where are women saving time and reallocating that saved time to work?

— Women spend the majority of their daily time cooking, as shown by the 2019 Time Use Survey of India.

— Another study, conducted by the author on 3,000 primary cooks in households in rural Indore finds that of the 60 hours of time spent on domestic work by rural women per week, the majority (more than 40 hours) is spent on cooking and cleaning — almost four hours per day, on average, which is equivalent to a part-time job.

— Almost 75 per cent of these women use firewood and cow dung for cooking, which not only makes cooking and cleaning more time-consuming, but also exposes these women to cardiovascular and lung disease due to indoor smoke inhalation.

— Comparing the average time taken by the primary cook to prepare the last meal for the family in households that do not have LPG access (and therefore use solid fuels or the traditional chulha for cooking) versus those households that have LPG access, we find that it takes approximately 30 minutes less time to prepare a meal if LPG is used rather than solid fuels for cooking.

— Subsequently, when households with and without LPG connections are matched on similar characteristics (including income), the time use data show lower time spent on fuel collection and fuel making by women in households with LPG access relative to those who do not have an LPG account in rural Indore.

— While households may have an LPG connection, the usage of LPG continues to be low in rural India. The PMUY programme has undoubtedly been a huge success. However, these households do not use LPG regularly for cooking.

— The fact sheet on the 2024 Time Use Survey shows a 1.5 percentage point increase in overall employment and 24 more minutes spent on employment activities by women, relative to 2019.

— Around 83.9 per cent females participated in unpaid activities during a day in 2024, almost the same as the level of 84.0 per cent in 2019, while for paid activities, their share increased 20.6 per cent in 2024 from 17.1 per cent in 2019.

— The participation rate of males in unpaid activities increased to 45.8 per cent in 2024 from 43.9 per cent in 2019, while for paid work, their share increased to 60.5 per cent from 54.8 per cent.

Do You Know:

— The National Statistics Office (NSO) under the Ministry of Statistics and Programme Implementation (MoSPI) has released the second All-India Time Use Survey for the period January-December 2024. It measures time dispositions by the population on different activities. The primary objective of the Survey is to measure the participation of men and women in paid and unpaid activities.

— The first All-India survey was conducted during January – December 2019. Only few countries around the world like Australia, Japan, the Republic of Korea, New Zealand, the USA, and China conduct such National Time Use Survey to analyze how people allocate their time to various daily activities.

JUST-IN-TIME RELEASE OF FUNDS SAVED RS 26,000 CRORE IN INTEREST COST: FM

The just-in-time release of funds implemented by the government through the Treasury Single Account System (TSA) for autonomous bodies and the Single Nodal Agencies (SNAs) model for states have saved the Centre nearly Rs 26,000 crore in interest costs since FY18 as borrowings were linked to the actual requirements, finance minister Nirmala Sitharaman said at an event on Saturday.

• With the implementation of the Central Nodal Agency (CNA) for central sector schemes, SNA for centrally-sponsored schemes and TSA for autonomous bodies, the Centre is now able to track funds flow till the end-user.

• With all these payment systems linked to the overarching Public Financial Management System (PFMS), the Centre analyses the real-time funds available in schemes and the next instalment can't be booked until the previous releases have been used. Lower floating of funds helps the Centre calibrate borrowings and save on interest costs.

• Unspent balance parked in more than 1.5 million bank accounts of implementing agencies across India was consolidated into 4,500 bank accounts of SNAs, bringing greater transparency.

• "Just-in-Time' fund releases have helped us to ensure that we don't borrow more than what we need. It has also given us an advantage in making sure to lessen the burden on future generations," she said.

WHAT INDIA NEEDS TO BECOME A HIGH-INCOME ECONOMY

In 2007-08, India was classified as a low middle income country. India then had a per capita income of $1,022 as per the International Monetary Fund. By 2024, more than a decade-and-a-half later, the average individual income is estimated to have risen to $2,697 as per the Fund. In 2024-25, the per capita income required to transition from low middle income to upper middle income status has been pegged at $4,516 by the World Bank. Going by current projections — the IMF expects the country's per capita income to rise to $4,195 by 2029 — India is unlikely to enter this category by the end of the decade. But, as per the World Bank, India is on track to become an upper middle income economy by 2032. The challenge, however, is to become a high income developed country by 2047.

This is a daunting task. Over the past several decades, only a handful of countries such as South Korea, Czech Republic and Romania have been able to transition from middle income to high income status. Several others such as Brazil, South Africa, Malaysia, have been unable to make this transition. These countries have been caught in the "middle income trap". The question is: Can India escape the fate of these countries? In a recent economic memorandum titled 'Becoming a high-income economy in a generation', the World Bank estimates that India would need to grow at 7.8 per cent over the coming decades to become a high income country by 2047. To put this growth in perspective — the country grew at 6.7 per cent over the two decades prior to the Covid pandemic. Thus, a business as usual scenario, while it may lead to "tangible welfare gains", will not suffice to deliver such high growth consistently over such a long period.

The Bank has outlined the policy agenda required to achieve this. This revolves on promoting structural transformation, increasing investments, facilitating the creation of more productive jobs, technology adoption, and enabling states to grow faster. Its "accelerated reforms" scenario

envisages the investment to GDP ratio rising to 40 per cent by 2035, the female labour force participation rate increasing to 55 per cent by 2050, and higher productivity. The investment to GDP ratio is currently around 33 per cent, with subdued private investments. The female labour force participation, while rising sharply over the past few years, is at 41.7 per cent (15 years and above). And rather than exiting agriculture, more are now employed in the sector — the percentage of workers engaged in the farm sector has risen to 46.1 per cent in 2023-24 from 44.1 per cent in 2017-18. Putting India on a sustained higher growth trajectory will require deeper and wide-ranging reforms by both central and state governments.

DIVERSIFY NOW

February's sharp rise in the monthly services Purchasing Managers' Index (PMI), to 59, has provided a welcome relief to investors and policymakers, following the rise in GDP growth numbers, released by the National Statistical Office (NSO) for the December quarter of the current fiscal (Q3FY25). The strong rebound in the services PMI, up from 56.5 in January, which marked a 25-month low, helped offset the decline in the manufacturing PMI, which fell to a 14-month low of 56.3 in February. A PMI reading above 50 signals expansion, while anything below this indicates contraction. The PMI survey, conducted every month by S&P Global across over 40 countries, is a key indicator of economic momentum. The fact that manufacturing and services — sectors that have accounted for about 80% of India's GDP since 2010 — remain in expansion mode is positive. This resilience persists despite capital outflows from Indian markets, suggesting that the country's economic fundamentals remain strong. A more telling indicator of long-term economic strength is the quarterly earnings of the Sensex, India's benchmark index comprising 30 of the most valued and actively traded companies on the Bombay Stock Exchange (BSE). The Q3FY25 results point to solid net profit growth for nearly all firms.

However, looming economic risks remain. The threat of reciprocal tariffs announced by United States President Donald Trump, and set to take effect on April 2, poses a challenge for the manufacturing sector. Meanwhile, the services sector is facing a different disruption: the rapid pivot to artificial intelligence (AI)-driven solutions. While the NSO reported 6.2% real GDP growth for Q3FY25, top executives from India's leading IT firms have, at an industry event in Mumbai, cautioned that growth in the sector could be as low as 5.1% in FY25, up from 3.8% in FY24. Although this may seem concerning for an industry that has enjoyed a 16% compounded annual growth rate for nearly 25 years, it still represents an increase of $29 billion, bringing the sector's expected value to $283 billion in FY25. In its 2025 Strategic Review report, NASSCOM has identified geopolitical upheavals and rising tariffs as key challenges. But business leaders at the event attributed much of the slowdown to the disruptive impact of AI, which is reducing earnings from new contracts and reshaping hiring and training practices. India's services and manufacturing sectors face a triple challenge: rapid technological transformation, increasing global protectionism, and the potential for a U.S. recession. This could have significant repercussions for India, given that the U.S. remains its largest trading partner. To navigate these headwinds, India must urgently diversify its trading base.

LITTLE HAS CHANGED IN THE INCOME-TAX BILL, 2025

In February this year, the Union Finance Minister introduced the Income-Tax Bill, 2025, in Parliament. If enacted, the legislation will replace the Income-Tax Act, 1961, and, according to the government, will simplify the law for both taxpayers and administrators alike.

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The current law, of 1961, the government claims, has become unwieldy and unclear not only for the common person but also for professionals, littered as it is with provisos, exceptions, and non-obstante clauses. The newly designed draft purports to clear the fog and foster greater certainty in taxation, with a view to reducing litigation and creating a fairer, more predictable tax environment.

There can be little doubt that these are worthy causes to pursue. But a reading of the Bill shows us that behind the cosmetic and structural alterations that it seeks to make, little else will change. Many of the complexities and ambiguities that plague the current legislation remain unbroken. And, in some areas, the Bill seeks to make into law a set of powers that are troublingly authoritarian, even more so than what the present, already severe, legislation permits.

Jurisdictions across the world have tried to move towards legislative drafting that promotes the use of plain language. The underlying idea is that laws should be more accessible to the broader public, thereby enhancing transparency and making governments more accountable.

Some critics argue that plain language and precision do not always go hand in hand — that the technicality of legalese ensures greater accuracy and specificity; that a quest for clarity can at times come at the cost of exactness. However, global examples have shown us that simplifying legal language is not necessarily detrimental to accuracy. In fact, clearer laws can help eliminate confusion, improve compliance and ultimately reduce litigation.

Complex and knotty text

But the Bill, despite its vaunted objective, scarcely embraces this approach. It continues to rely on dense and convoluted text, doing little to make the law more accessible to the common taxpayer. For instance, we are led to believe that the replacement of the phrase "notwithstanding anything contained to the contrary…" with the words "irrespective of anything to the contrary" will help simplify the law.

The use of the term "notwithstanding" denotes what lawyers describe as a "non-obstante" clause; it has a rich legal history attached to it. In theory, the word "irrespective" ought to now be accorded the same meaning, but it is hard to comprehend how this change helps unravel the law to the everyday taxpayer.

It is worth bearing in mind that fiscal laws are not the easiest to draft in simple terms. But the Bill's failure here emanates at least partly out of the absence of any change in government policy. The state's approach to how it taxes income remains what it has been for years. In the absence of any fundamental adjustment in the law's basic thrust, the draft winds up akin to something of a manual or a digest — a marginally more concise guide to the existing 1961 law.

The Bill does seek to remove a few of the outdated redundancies in the prevailing statute. In places, definitions have been made crisper, and some of the timelines and compliance requirements have been consolidated into tables and schedules. But all of this could well have been achieved through streamlined amendments rather than a complete overhauling of the existing statute.

What is more, for all the efforts that the Bill seeks to make, its provisions continue to perplex. The framers appear to have overlooked the fact that a mere shifting of timelines from clauses and paragraphs to tables and schedules will not eliminate the law's inherently litigious nature, especially when those tables include cross-references to other sections of the Act.

Cosmetic alterations

To make matters worse, despite its intended repeal, the new law will also incorporate by reference some of the existing legislation's clauses. For example, the term "income" is defined under Section 2(49) to include a series of things such as profits and gains, dividend and allowances, as well as everything covered under Section 2(24) of the present law. If a definition needs reference to the old legislation, one might well wonder what we are really gaining from this exercise.

Bringing about textual alterations without altering the statute's basic philosophy presents another problem. Since 1961, India's courts have rigorously interpreted the legislation's provisions, clarifying the law for taxpayers. Now, changes made through the Bill may reopen settled debates, subjecting the same provisions to renewed interpretation. The result might well be more litigation and less certainty.

Consider one of the more heavily contested areas under the Act: the power of the income-tax authorities to reopen completed assessments. Until April 2021, the Revenue could make reassessments only if it had "reason to believe" that income had escaped the tax net — a phrase that sparked endless court battles. The law was then changed to allow reassessments wherever authorities had "information" suggesting income had escaped assessment. The term "information" was defined to include, among other things, data obtained through a "risk management strategy" framed by the Central Board of Direct Taxes. However, in a law brimming with definitions, "risk management strategy" remained undefined.

Although some of these gaps have been addressed by the courts, delegating critical power to the executive has opened the door to potential abuse. The Bill does little to filter this provision. Instead, it adopts the existing text and rearranges its structure. It is difficult to see how this approach will alleviate litigation.

The point of search and seizure

Perhaps the most worrying aspect of the Bill is its approach to search and seizure. The current law grants to the taxman enormous police power to search persons and their properties, and seize goods found during a search. Although this authority has been upheld by the courts previously, its validity following the Supreme Court of India's judgment in Justice K.S. Puttaswamy vs Union of India (2017), where the fundamental right to privacy was affirmed, is suspect.

Rather than addressing this concern, the Bill extends the power of search into new domains. It does so by allowing officials to inspect "any information stored in an electronic media or computer system". A computer system is defined widely to include all manners of data storage and what is described as a "virtual digital space" — among other things, email servers, social media accounts and digital application platforms. Should a taxpayer deny access to these spaces, the authorities can now override access codes to enter the system.

In sanctioning this the Bill marks a significant departure from the law as it stands, which does not explicitly permit digital intrusions. Until now, officers have still been demanding access to laptops and hard disks, although it could be contended that these directions are in breach of the law. But if the Bill is enacted, officials, in furtherance of a search, can legitimately trawl through emails and messages received and sent on Gmail, X, or Instagram, and every other such platform.

In times where digital communication is so deeply integrated into both professional and personal life, to permit government easy access to intimate and sensitive data is fraught with danger. The

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Bill offers no judicial oversight over these powers. To the contrary, it enables authorities to keep to themselves the reasons undergirding a search.

When the Select Committee of the Lok Sabha scrutinises the Bill, it may well find that this is an exercise best shelved. Rather than a sweeping effort at repeal and reenactment, we may be better served if Parliament can tidy up some of the misgivings in the present law and rid it of its more draconian commands.

KERALA PASSES RESOLUTION AGAINST OFFSHORE MINING

The Kerala Assembly on Tuesday unanimously passed a resolution opposing the Centre's plan to permit offshore mining along the State's coast.

The resolution, presented by Chief Minister Pinarayi Vijayan, expressed grave concern over the amendments to the Offshore Areas Mineral (Development and Regulation) Act, 2002, which allowed private participation in deep-sea mineral exploration and mining. The amendment, passed in 2023, has paved the way for Union Ministry of Mines to auction deep-sea mineral blocks. The State government argues that this move can have devastating consequences for the State's marine resources and economy.

The Chief Minister highlighted the potential destruction of the fragile marine ecosystem, while stressing that the move would severely impact both fish resources and biodiversity in the deep sea.

The resolution pointed out that experts have raised alarms about the significant risks posed by the new legislation.

Mr. Vijayan also highlighted the threats posed to national security, considering the policy would grant private entities access to strategic minerals found in deep-sea areas. The resolution also delved into the economic implications for Kerala's fishing community and the State in general.

WHAT DOES NAVRATNA STATUS FOR IRCTC AND IRFC MEAN?

The Centre on Monday (March 3) approved the upgradation of Indian Railway Catering and Tourism Corporation (IRCTC) and Indian Railway Finance Corporation (IRFC) as the country's 25th and 26th Navratna companies respectively.

— All seven listed Central Public Sector Enterprises (CPSEs) of the Indian Railways now have Navratna status. The Indian Railways have a total 12 CPSEs.

— Navratnas are the second category of the central government-owned 'Ratna' companies, placed between the Maharatnas and the Miniratnas, based on criteria including profitability, net worth, earning, inter-sectoral performance, etc.

— The Department of Public Enterprises (DPE) of the Ministry of Finance picks the CPSEs for Navratna status. Six indicators are considered: (i) ratio of net profit to net worth, (ii) ratio of manpower cost to total cost of production or services, (iii) ratio of profit before depreciation, interest, and tax (PBDIT) to capital employed or return on capital employed, (iv) ratio of profit before interest and taxes (PBIT) to turnover, (v) earning per share, and (vi) inter-sectoral performance of the company.

— The six indicators carry weights from 10 (for earning per share) to 25 (for ratio of net profit to net worth).

— If a CPSE has a composite score of 60 or higher for all six indicators, and has obtained an Excellent or Very Good MOU rating in three of the last five years, it is eligible to be considered for Navratna status.

Do You Know:

— Navratna status helps a company in several ways, from achieving greater financial autonomy to making global expansion easier to acquiring a better market position.

FIRST ENGINE FROM RAILWAYS' NEW LOCO PLANT LIKELY TO BE LAUNCHED IN APRIL

Nearly three years after the decision to establish the Indian Railways' fifth locomotive manufacturing plant in Dahod, Gujarat, was announced, the facility is set to begin the production of one of the most powerful electric locomotives (9,000 horsepower) as a prototype of the engine nears its completion, said Ashwini Vaishnaw, Minister for Railways, on Saturday.

• Vaishnaw visited the Dahod factory and inspected the prototype of the high horsepower electric locomotive which is undergoing different levels of testing. He said that around 40 days of work remains before the locomotive's launch.

• Currently there are around 12,000 electric locomotives used across the Indian Railways. Officials said that the factory has a target to manufacture a total of 1,200 such locomotives in 11 years.

• The new plant was announced by Prime Minister Narendra Modi in April 2022. These high horsepower locomotives are planned to be used primarily on the Western Dedicated Freight Corridor (WDFC) to increase the average speed of such trains to around 50-60 kmph compared with the existing 20-25 kmph. The WAG-12B is the most powerful locomotive in the Indian Railways with 12,000 horsepower. It is used for freight operations.

• In December 2022, German engineering giant Siemens secured a contract for manufacturing 1,200 locomotives in Dahod and for their maintainance at four maintenance depots — Visakhapatnam, Raipur, Kharagpur, and Pune — for a period of 35 years, utilising the railway's manpower. The estimated value of the contract is Rs 26,000 crore.

• According to the Ministry of Railways, these locomotives will carry 4,500 tonnes in double stack configuration at a maximum speed of 75 kmph.

Do You Know:

• The Indian Railways has four existing production units, namely, Diesel Locomotive Works (DLW) in Varanasi, Chittaranjan Locomotive Works (CLW) in Chittaranjan, Diesel Modernisation Works (DMW) in Patiala, and Electric Loco Assemble and Ancillary Unit (ELAAU) in Dankuni, which is a part of CLW.

• There are two more locomotive production units — Marhowra and Madhepura in Bihar — established in public private partnership mode.

CCI REJECTS COMPLAINT ACCUSING MICROSOFT OF ABUSING DOMINANCE

The Competition Commission of India (CCI) has rejected an antitrust complaint against Microsoft, which accused the firm of abusing dominance by bundling Microsoft Defender antivirus with the Windows operating system.

The case, filed under Section 19(1)(a) of the Competition Act, 2002, was closed under Section 26(2) after the Commission found no prima facie evidence of an anti-competitive conduct.

The complaint, filed by an undisclosed informant, claimed Microsoft's practice of pre-installing and pre-activating Defender in Windows OS had effectively sidelined third-party antivirus providers.

It was alleged that by requiring original equipment manufacturers (OEMs) to bundle Defender, Microsoft restricted market access for competing security software developers, violating provisions of the Competition Act.

Entry barriers

According to the informant, Microsoft's licensing agreements and participation requirements in the Microsoft Virus Initiative (MVI) created significant entry barriers.

The complaint claimed Microsoft used dominant position in the operating system market to leverage unfair advantage in antivirus sector, thus restricting competition and innovation.

Microsoft argued integrating Defender into Windows OS was aligned with industry standards and essential for providing security to users.

It maintained Defender was not marketed as a standalone product but is a built-in feature offered at no additional cost.

The firm emphasised that users are free to install alternative antivirus solutions, and if a third-party antivirus software registers with Windows, Defender automatically disables its real-time protection. Further, Microsoft asserted its MVI software was voluntary, designed to enhance collaboration with security vendors and did not restrict competitors from offering their products independently.

After reviewing the submissions, the CCI ruled that Microsoft's inclusion of Defender does not impose unfair conditions on users or hinder competition. The Commission noted that alternative antivirus software remains available and OEMs can pre-install competing security solutions. It also highlighted Microsoft's actions had not impeded technical or scientific advancements in the cybersecurity market as third-party antivirus firms continue to develop new features and stay competitive.

'Security feature'

On allegations of illegal tying and bundling, the CCI said Microsoft Defender was integrated as a security feature rather than a separate product. The CCI found no coercion forcing consumers to use Defender exclusively nor any substantial foreclosure of the antivirus market as several major cybersecurity firms continue to thrive.

DreamIAS

On claims Microsoft restricted non-MVI members from accessing Windows OS, the CCI concluded participation in the MVI programme was not mandatory for antivirus developers.

CAN RBI'S PROPOSAL TO WAIVE FORECLOSURE CHARGES HELP MSMES?

The story so far: On February 21, the Reserve Bank of India (RBI) floated a consultation paper seeking to waive foreclosure charges, and prepayment penalties, on loans taken by micro and small enterprises (MSEs). At present, banks and non-banking financial institutions cannot levy the same on any term loan at floating rates of an individual borrower. The proposals thus extend these provisions to MSEs for business purposes emphasising the "paramount importance" of "easy and affordable" financing for them.

What has RBI proposed?

The central bank has proposed that banks and NBFCs must not levy foreclosure charges or prepayment penalties on loans taken at floating rates by MSEs for business purposes. At present, the provision only exists for loans taken by individuals for purposes other than business. The proposed regulation thus extends the purview of the guideline. This shall apply to all MSEs borrowing up to ₹7.5 crore barring an exception for Tier 1 and Tier 2 Primary (Urban) Co-operative Banks and base layer NBFCs which have asset sizes of less than ₹1,000 crore.

The RBI also underlines that banks and NBFCs cannot stipulate any minimum lock-in period for the proposed guidelines to become applicable. Furthermore, it underlines that regulated entities cannot levy any retrospective charges which were waived off earlier and/or not disclosed in advance to the borrowers.

The primary objective of the proposed measures is to provide for easy and affordable financing to MSMEs. The RBI observed in their supervisory review about the existence of "divergent practices" in sanction of loans to MSMEs. These, it observed, led to customer grievances and disputes. Significantly, the regulator noted banks and NBFCs included restrictive clauses in loan agreements that restrained MSE borrowers from switching to an alternate lender.

Do moving loans for MSMEs ease with the proposed measures?

Vivek Iyer, Partner and Financial Services Risk Leader at consulting firm Grant Thornton Bharat told The Hindu that the waiver would bring more borrowers into the formal system (of credit). He added that regulatory clarity would be important to first-time borrowers in this segment, as it "mitigates the risk of hidden charges and offers better ability for MSMEs to plan their cash flows and incentivises borrowers to repay". Validating this, M. Karthikeyan, President at the Coimbatore District Small Industries Association (CODISSIA) said 3-5% of their affiliated units seek foreclosures. He explained that a small and medium enterprise (SME) opts for foreclosure to move to another bank because they face issues in availing additional loans from the same bank.

Mithun Ramdass, President at the Southern Indian Engineering Manufacturers Association (SIEMA), said switching loans has been a "nightmare" because of the foreclosure charges and inordinate delays in processing papers. "The RBI should put in place a time limit for processing and terminating loans or moving it to another bank by MSME owners," he suggested.

Does it free up more money for MSEs?

The proposed measures are meant to help small businesses to clear their debts without penalties. Banks also seek penalties as compensation for loss in interest payments on early exits, while an early exit from loan obligations helps ease the debt stress of MSMEs. NBFC IIFL Finance said in a blogpost that the waiver on foreclosure would be "extremely beneficial" to MSMEs and their working capital loans as it is commonplace to pay before the date.

J. James, president, Tamil Nadu Association of Cottage and Tiny Enterprises (TNACTE), says that about a quarter of micro or cottage units are unable to avail a loan because banks insist on collateral. "When most of the micro units operate in rented building, they are unable to pledge property documents. Banks should lend more to micro units without asking for collateral," he stated.

What does this mean for banks and NBFCs?

According to Adhil Shetty, CEO, BankBazaar.com, what is good for the consumer would in turn be good for the industry. "Foreclosure charges had been waived off retail loans in the past, and this was welcomed by consumers. Now this benefit may be extended to SME loans," he said.

But according to an IIFL Capital report, the proposed measures could reduce profitability of retail products such as loan against property (LAP), small and medium enterprises' loans (SME) and business loans. IIFL Capital argues that this would be due to a potential increase in competition. It says that the small businesses segments constitute about 5% to 25% of assets under management for NBFCs and housing financial companies. It holds that NBFCs with lower cost of funds, that is, the cost incurred by the lender to borrow in the interbank market—and backed by a strong parent entity—could be partially offset by raising the share of more granular and higher yielding customers when loans (via balance transfer) are moved to them from smaller peers.

POWERING A SUSTAINABLE FUTURE

Generating electricity by burning coal leads to considerable air pollution, which affects human and animal health. Recently, Dr Kirat Singh and colleagues from Stanford Doerr School of Sustainability, the U.S. have shown that in India nitrogen dioxide and ozone emissions from coal-fired power plants diminish yields of staple crops like wheat and rice. Using quantitative methods, they estimate that annual losses are in excess of 10% in parts of India. This works out to a loss of about six years' worth of growth in average yield in recent years. The productivity of our crops has risen due to improved varieties, better irrigation and mechanisation, and this reduction in yield is a point of concern.

Wheat is largely grown in the central and northern states, while rice is mainly produced in southern and eastern states. The amount of coal left in these areas is estimated by the Ministry of Coal to last for the next 120 years. Coal-fired power generation has been used for India's electricity supply since its introduction in 1920 at Hussain Sagar, Hyderabad, under the Nizam's rule, using British equipment. This method is still being used in India, with some improvement over the years. We thus need to think of other methods to generate electricity.

Cleaner methods

One method is from the 'ground to the wind'. This involves the use of wind power by placing windmills to generate electricity. Nine windy States of India generate as much as 50 Gigawatts

(GW) of electricity. India is the fourth largest wind power maker in the world. Several private companies have installed windmills that produce electricity for urban and rural Indians.

The second method is 'Sun to the land', which uses energy from sunlight. This involves setting up solar panels on houses and buildings or on large-scale solar farms. These panels absorb sunlight and convert light into electricity. These solar roofs are already very popular, and the Central and State governments offer subsidies to those who install solar panels.

The third method is 'Block a river and generate power'. This involves stopping a part of a river to make electricity, besides offering water for agriculture in areas where the river flows. When a river's water is blocked by a dam and then released, the resultant energy is used to generate electric power. The top five dams across India together generate as much as 50 GWs (Gigawatts) of hydroelectric energy.

The fourth one is when a river flows into the sea. A review paper published in Nano Research Energy discusses how electrical energy can be produced when river waters flow into sea water, which is saltier. This osmotic pressure difference has been used by Dr Javad Safaei at the Centre for Clean Engineering Technology, University of Sydney, Australia. Likewise, engineers at Penn State, U.S. have generated electricity osmotic pressure differences. India has a vast coastline of 7,500 km, where rivers from the west, south and east drain into the sea, and this technology can effectively generate electricity. Here is an opportunity for Indian scientists and technologists to rise to the challenge.

And the fifth method is to use nuclear reactors for peaceful purposes and generate electricity. Nuclear power plants use nuclear fission to heat water, create steam, and spin turbines to generate electricity.

The set of eight nuclear power plants in India together generate 3.5 GW of electricity.

Given all these, let us give up coal to generate electricity, which pollutes the country.

INDIA'S AGRICULTURE EXPORTS

India's agriculture exports have risen 6.5%, from $35.2 billion in April-December 2023 to $37.5 billion in April-December 2024. That's more than the 1.9% overall increase in the country's merchandise exports for this period. That said, the difference is even starker in imports.

— While India's total goods imports during April-December 2024 were 7.4% up over April-December 2023, there was an 18.7% rise in imports of farm produce (from $24.6 billion to $29.3 billion) for the same period.

— The agricultural trade surplus has thus reduced from $10.6 billion in April-December 2023-24 to $8.2 billion for the corresponding nine months of the current fiscal (April-March).

— India is a net agri-commodities exporter, with the value of its outward shipments consistently exceeding imports. However, the trade surplus, which peaked at $27.7 billion in 2013-14, shrunk to $8.1 billion by 2016-17. It rose thereafter to $20.2 billion in 2020-21, before falling to $16 billion in 2023-24.The expansion or narrowing of the surplus has largely to do with exports.

— The No. 1 export commodity, marine products, has registered a drop from $7.8 billion in 2021-22 and $8.1 billion in 2022-23 to $7.4 billion in 2023-24… With the US being the biggest market, any move by President Donald Trump to impose tariffs can further hurt Indian seafood exports.

— Sugar has also taken a hit, with exports more than halving from $5.8 billion in 2022-23 to $2.8 billion in 2023-24. Its exports, and also that of wheat, have suffered from government restrictions following concerns over domestic availability and food inflation.

— India's agricultural imports are dominated by two commodities: Edible oils and pulses.

— Imports of pulses had come down considerably — from $3.9 billion in 2015-16 and $4.2 billion in 2016-17 to an average of $1.7 for the five years ending 2022-23 — on the back of increased domestic production. That underwent a reversal with a poor crop in 2023-24.

— In edible oils, the outgo during 2024-25 is expected to be the highest after 2021-22 ($19 billion) and 2022-23 ($20.8 billion), which was basically courtesy of the war in Ukraine that drove up global prices.

— As far as cotton goes, the Bt revolution — the planting of genetically modified hybrids — turned India into the world's second largest exporter after the US. The country's cotton exports were valued at $4.3 billion, $3.7 billion and $3.6 billion in 2011-12, 2012-13 and 2013-14 respectively. That has collapsed to $781.4 million in 2022-23 and $1.1 billion in 2023-24.

Do You Know:

— The US is India's largest agri-export market, giving a trade surplus of $3.46 billion in 2023-24. Key Indian exports include shrimp, basmati rice, processed foods, and honey, while the US exports to India include almonds, cotton, ethanol, and soybean oil.

— If Trump's tariff threats materialise, Indian agri-exports — especially duty-free items like shrimp — could become uncompetitive, while imports from the US may rise. This could shrink or even erase India's agri-trade surplus with the US.

— The challenge for India is to strike a balance between protecting its farmers and keeping its most lucrative export market open. India and the US are already holding discussions for a broader trade agreement with the ambitious "Mission 500" which aims to boost bilateral trade to $500 billion by 2030.

— There is much scope for increasing India's agri-exports to the US, provided India gets market access. Food preparations, butter, bovine meat cuts, all attract more than 20 per cent import duty in the US. These can be negotiated to lower levels provided India is also ready to lower its import duties.

INDIA CAN BE THE WORLD LEADER IN TEXTILES. HERE'S HOW

One goal that India must prioritise if it has to become Viksit Bharat by 2047 is job creation. The textiles and apparel industry is India's second-largest employer after agriculture, providing direct employment to 45 million people. The sector is expected to motor on at an annual growth rate of 10 per cent and become a USD 250 billion market by 2030, with the potential to add millions of more jobs.

— If our exports grow from the current USD 45 billion to the targeted USD 100 billion, and if the economy grows at 6-7 per cent a year, textiles can add up to one million jobs every year from now to 2030 — 10 per cent of what the country needs.

— This is all very good. But we have an opportunity to be great. China, Bangladesh and Vietnam, the world's three leading textile exporters, are undergoing shifts for reasons ranging from geopolitics to internal turmoil. Global markets are increasingly looking towards India.

— Government has approved various schemes with outlays of several thousand crores that incentivise the sector — such as the Pradhan Mantri Mega Integrated Textile Region and Apparel (PM MITRA) Parks, the Production Linked Incentive (PLI) Scheme and the Rebate of State and Central Taxes and Levies (RoSCTL) Scheme.

— The USD 100 billion Indian textile market presents a huge domestic opportunity. A burgeoning middle class is driving demand and this trend is further amplified by Gen Z.

— India suffers a 15-20 per cent cost disadvantage compared to competing countries like Bangladesh and Vietnam. A big component of this is lower efficiency in the labour-intensive garment manufacturing process.

— Often in India, if the jobs are in one hub, the workers are elsewhere. Even Tiruppur, the apparel mega-hub in Tamil Nadu, has a labour shortage because industries there are growing fast and workers quit often. On the other hand, in places like Uttar Pradesh, Bihar, Odisha and Madhya Pradesh, where jobs need to be created, there's barely any industry. India will have to create jobs where they are required.

— The rate of attrition in our textile industry is as high as 10 per cent. Workers often have to spend a big part of their salary in transport and accommodation and are liable to leave their present employer even for a small wage hike.

— Creating living quarters for workers near factories, as is done in countries like China, could reduce absenteeism, improve staff retention, and lead to higher productivity.

— A defining feature of the garment industry is that women represent 90 per cent of its blue-collar workforce. Stable jobs in safe environments empower women.

— Automation is often associated with efficiency and reduced manpower. However, technology and human talent will continue to coexist. When efficiency goes up, the industry will grow, creating more jobs.

Do You Know:

— India's textile industry is among the largest in the world, spanning a vast value chain from cotton cultivation to high-end apparel manufacturing.

— The size of India's textile and apparel industry cannot be understated—it contributes 13% to industrial production, 12% to exports, and roughly 2% to GDP.

— After China, India is the second largest producer of cotton, accounting for 24% of global production. Cotton cultivation engages around 60 lakh farmers, mostly across Gujarat, Maharashtra, and Telangana.

— The entire cotton textile value chain—from processing raw fibre and spinning yarn to weaving fabric, dyeing, and stitching—employs over 4.5 crore people.

— While fibre consumption in India tilts heavily towards cotton, the textile industry also consumes other natural fibres like wool and jute. India is also the world's second largest producer

of man-made fibres (MMF), with Reliance Industries Ltd leading in polyester fibre and Aditya Birla Group's Grasim Industries Ltd as the only domestic producer of viscose fibre.

— Despite being a global leader in production, MMF consumption in India is just 3.1 kg per capita, compared to 12 kg in China and 22.5 kg in North America, according to a Ministry of Textiles note.

— Roughly 80% of India's textile value chain is concentrated in MSME clusters, each with its own specialisation. For instance, Bhiwandi in Maharashtra is a key hub for fabric production, Tiruppur in Tamil Nadu leads in t-shirts and undergarments, Surat in Gujarat specialises in polyester and nylon fabric, and Ludhiana in Punjab is known for woolen garments.

WHY IS THE PARANDUR AIRPORT PROJECT FACING OPPOSITION?

The story so far:

More than three years after its announcement, the second airport project for Chennai at Parandur is finally inching closer to its final approval. The Minister of Civil Aviation Kinjarapu Rammohan Naidu who visited Chennai on February 27, said that the in-principle approval is likely to be accorded within the next two weeks. However, villagers, farmers and environmentalists have been persistently opposing the project for last three years.

Does Chennai need a second airport?

A proposal to construct a new international airport for Chennai city was floated first in 1998. In the same year, then Chief Minister M. Karunanidhi wrote to the Prime Minister seeking to speed up the proposal for building a second airport in the city. Subsequently, a site near the south of Meenambakkam was identified and the State government mulled on constructing it under the Build-Own-Operate and Transfer (BOOT) concept. In 1999, the city got close to getting the airport as the Centre approved the international airport proposal at ₹2,000 crore. In the next couple of years, the State government went on to earmark 1,457.5 acres of land just north of the present airport at Meenambakkam. Some changes occurred and by 2007, a massive airport over 4,820 acres of land with four runways was planned at Sriperumbudur. But the project failed to take off.

Now, the Tamil Nadu government has finally decided to catch up on lost time and in 2022, Parandur was chosen as the site for Chennai's second airport. The ₹29,144 crore Parandur airport will come up in four phases with three terminals and two parallel runways over 2,172.73 hectares of land and will have a capacity of handling 100 million passengers.

Why is there opposition?

As soon as the project was announced, a section of the population was disappointed at the government for choosing a site replete with several waterbodies, and the threat it could pose for the environment. Residents of 13 villages who will be displaced due to the project and farmers staring at giving up their lands and an uncertain future started protests almost immediately. Residents of one of the villages, Ekanapuram, which will be severely affected by the project, resolutely continue to hold protests every evening, till today, recording over 950 days of protest. Environmentalists have strongly advised against implementing the project as 26.54% of the site comprises wetlands. Experts pointed out how Chennai city, which has grappled with floods on multiple occasions, could bear a serious brunt of inundation should this project become a reality. The Kamban canal in the Parandur area connects numerous water bodies and disturbing its natural course could cause a serious cascading effect on the city during the monsoon.

Due to the protests and increasing criticism, the Tamil Nadu government constituted a committee and a hydrogeological report was submitted. This report suggests ways and means to mitigate flooding. However, the report has been kept confidential and not been made public by the government as yet, adding to the concerns.

What is the status of the airport now?

Land acquisition for the project and a series of surveys mandated by the Ministry of Environment, Forest and Climate Change are underway now. But one of the major challenges that lies ahead for this project is receiving the environmental clearance due to the presence of vast amounts of wetlands in the site. If the Tamil Nadu Industrial Development Corporation Limited receives this approval by the end of this year or early next year, then, post land acquisition, the construction of the terminals could start. The government looks to complete the first phase and have the terminal up and running before the end of 2028.

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LIFE & SCIENCE

WHY AGENCIES WANT TO MAKE THE MOST OF THE 'SOLAR MAXIMUM'

The National Aeronautics and Space Administration (NASA) is set to launch its latest solar mission from Vandenberg Space Force Base in California on Thursday (March 6). The mission, known as Polarimeter to Unify the Corona and Heliosphere (PUNCH), will be the third major solar mission to be launched in the past 18 months.

— The increase in the number of solar missions is no coincidence. The reason behind this has to do with the solar cycle.

— Like a bar magnet, the Sun also has a magnetic field with north and south poles. The magnetic field exists due to the constant movement of electrically charged particles within the Sun. Every 11 years or so, the Sun's magnetic field completely flips, meaning its north and south poles switch places. This periodic change is known as the solar cycle.

— The solar cycle affects activity on the surface of the Sun. For instance, the Sun is at its most active when the magnetic field flips. This phase is called the solar maximum. During this period, the star can send out more frequent and intense bursts of radiation and particles into space. After the flip, the star calms down until it reaches the solar minimum, and a new cycle begins.

— During the solar maximum, the Sun's surface has the most number of sunspots — small, dark and cooler areas where the magnetic field is particularly strong. During the solar minimum, the Sun has the least sunspots. Scientists track the solar cycle by counting the number of sunspots.

— The present solar activity and number of sunspots suggest that this cycle may be nearing its maxima, though the official confirmation of the same is yet to be made. According to the National Oceanic and Atmospheric Administration (NOAA), which is one of the organisations that track solar cycles, solar activities in this cycle picked up momentum around May 2022 and has continued to remain above normal through most of 2024.

— The solar maximum is the best possible window available for physicists to both launch and observe the sun. This is precisely why there has been a spike in the missions to observe the star. Solar physicists are well aware if they miss this window, the next possible intense solar activity will not be before 2035-2036.

Do You Know:

— PUNCH is a first-of-its-kind solar mission that will study the solar corona — the outermost layer of the Sun's atmosphere. Four identical suitcase-sized satellites will continuously image the Sun's inner corona and provide origins of solar flares, etc.

— In September 2023, the Indian Space Research Organisation (ISRO) launched Aditya L1, the country's first solar mission. It is designed to study solar flares and solar winds, measure low-intensity magnetic fields and solar soft X-ray flux, etc.

AFTER A SUCCESSFUL PRIVATE LANDING ON MOON, MORE MISSIONS TO FOLLOW

An American private space company called Firefly Aerospace successfully landed its spacecraft on the Moon on Sunday, the first of the several arrivals that the lunar surface is expecting this year

from different players. Firefly's Blue Ghost mission is just the second time that a private space company has landed on the Moon, and the first such almost flawless landing.

— These private space missions have been facilitated by NASA, which is trying to build a larger ecosystem of space transportation companies in preparation for frequent travels to the Moon, for humans as well as cargo, in the coming years.

— The first rounds of the private space missions are carrying a variety of scientific instruments, mostly those of NASA, to further our understanding of the Moon's surface and its surroundings. Blue Ghost has taken instruments that will test robotic drilling technology, carry out studies of the surface and sub-surface characteristics and composition, and explore dust mitigation methods, among others. There are 10 payloads in all.

— The spacecraft has landed about 20 degrees north of the Moon's equator on the nearside, the side of the Moon that always faces the Earth. The site is known to have been impacted by a large asteroid about three billion years ago.

— The payloads would be operational for one lunar day, or about 14 Earth days. The lander is equipped with some additional supplies of battery power, which will enable the functioning of the payloads for some time during the lunar night too. Lunar nights are very cold, making it difficult for most machines to survive. On March 14, the mission is hoping to capture high-definition images of a solar eclipse on the Moon, with the Earth slated to come in between.

— The Blue Ghost mission does not have a rover to walk over the Moon's surface. The payloads will be deployed from the lander and remain static.

— The entry of private operators ensures a greater frequency of trips to the Moon, and the deployment of a larger number of scientific instruments. Even as Blue Ghost landed on Sunday, the next CLPS mission is already on its way. Intuitive Missions launched its second mission, this one called Athena, or just IM-2, on February 26, and is supposed to land on March 6. Using a spacecraft similar to the first mission, IM-2 is scheduled to land in the relatively less-explored southern pole region of the Moon.

Do You Know:

— The Chandrayaan-3 mission was India's third lunar mission and second attempt to make a soft landing on the surface of the Moon. It was launched by Launch Vehicle Mark-III (LVM3).

— The propulsion module carried the lander and rover configuration to a 100 km lunar orbit. The propulsion module had a Spectro-polarimetry of Habitable Planet Earth (SHAPE) payload to study the spectral and Polari metric measurements of Earth from the lunar orbit.

— Chandrayaan-3 consisted of an Indigenous Lander module (LM), Propulsion module (PM) and a Rover to develop and demonstrate new technologies required for Interplanetary missions.

AGAINST DOMINATION

Just as Firefly Aerospace became the first private entity to soft-land a robotic lander on the moon on March 2, NASA acting administrator Janet Petro said "the way that we keep America first is by dominating in all the domains of space. And the domain ... we're going to capture ... is going to be on the surface of the moon, and around the moon". The comment was objectionable in its essence, but also carries a lesson for the rest of the spacefaring world. The U.S. space programme remains

the wealthiest and most farsighted in modern history. But like U.S. President Donald Trump, she seems to have lost sight of the difference between leadership and domination. Just as the conduct of Mr. Trump and the U.S. Vice-President at the White House meeting with the Ukraine President clarified the U.S.'s self-serving priorities, so too does Ms. Petro's comment reveal a nakedly aggressive streak in American policy — in this case, what the U.S. sees as its rightful place in humankind's aspirations about space.

The moon and cislunar space, and the material and intellectual resources required to access them, are part of the Great Commons and they are already suffering the effects of a growing tide of protectionism worldwide, exacerbated by gaps between the evolution of law and the pace of innovation. Regulatory clarity is emerging very slowly and is often stunted. The U.S. Federal Aviation Administration (FAA) recently said that it cannot be held responsible for the fragments of a SpaceX rocket that fell over Poland because the FAA lost oversight once SpaceX had lost control of it. Given the bent of the FAA's and Ms. Petro's statements, there is no reason these commons will escape the U.S.'s reckless visions of domination without proactive decision-making. In the absence of the ability to defy its government's orders, NASA's position risks endangering international cooperation — an enviable edifice assembled over decades in the face of an expensive, perilous, time-consuming affair — in space flight, often with NASA input. Irrespective of Ms. Petro's tenure at NASA, her words indicate that the helmsperson is not beyond being expected to further Mr. Trump's inflammatory rhetoric, if not agenda, in space and as well as on the ground. The cooperation must resist this. Given the Trump administration's attitudes towards other cooperative efforts, such as the fight against climate change, which demand internationalism over provincialism, it is imperative that national and supranational space bodies, including the Indian Space Research Organisation, come together to cultivate mechanisms to resist unilateral action in space, if not prevent it altogether.

WHEN DEBRIS FROM SPACE CRASHES TO THE EARTH, WHO IS RESPONSIBLE?

Imagine going about your day when a heavy metal object suddenly crashes in front of your house. You and your neighbours are shocked. You rush out to check what has happened and struggle to make sense of the sight: a misshapen piece of hot metal, blackened by fire and soot, with a cloud of dust swirling around it.

This isn't a scene from a sci-fi film. On December 30, 2024, a metal object weighing 500 kg fell in Makueni county in Kenya. Experts from the Kenya Space Agency characterised it as a separation ring from a space-bound rocket. While Jonathan McDowell, an astronomer known for cataloguing space launches and objects in orbit, and some others have expressed scepticism that the object was a part of a rocket, similar incidents in the U.S. and Australia before have served repeated reminders of the urgent problem of space debris.

Space activity is becoming more brisk as countries are launching more rockets, satellites, and spacecraft. Falling debris also challenges the laws that protect humans. The question of accountability looms largest: when debris crashes to the earth, who is responsible and how can they be held accountable?

Space debris in law

Despite being a critical issue in space governance, space debris lacks a universally accepted legal definition in international treaties. Commonly accepted working definitions come from the Inter-Agency Space Debris Coordination Committee and the UN Committee on the Peaceful Uses of

Outer Space (COPUOS). The latter refers to space debris thus: "space debris is all man-made objects, including fragments and elements thereof, in Earth orbit or re-entering the atmosphere, that are non-functional."

Given the lack of definition, legal disputes often hinge on whether a piece of debris qualifies as a "space object" under the Convention for International Liability for Damage Caused by Space Objects of 1972. This distinction is critical because liability attaches to space objects under the Convention, but if debris is no longer under a state's jurisdiction, responsibility becomes more challenging to enforce.

Article VI of the Outer Space Treaty 1967 forms the cornerstone of international space law. It says states bear responsibility for all national space activities, whether conducted by governmental or private entities. The1972 Convention also introduced "absolute liability" for damage caused by space objects on the earth. Unlike fault-based liability, absolute liability requires no proof of negligence: launching states are automatically responsible for harm caused by their debris.

Not just a technicality

But enforcement remains a crucial challenge. The resolution of disputes banks on diplomatic negotiations, often resulting in prolonged settlements that fall short of actual costs. After the Soviet satellite Cosmos 954, carrying a nuclear reactor, crashed in Canada in 1978, Canada spent years negotiating with the USSR and ultimately secured only $3 million of the estimated $6 million clean-up cost. The case underscored the gap between legal liability and practical enforcement, leaving affected parties vulnerable to inadequate resolutions.

If a fragment from a defunct satellite causes damage decades later, can the original launching state still be held liable? Such legal uncertainties also weaken the effectiveness of existing liability frameworks and complicate enforcement.

Attributing debris to its source adds another layer of complexity. While advanced tracking systems and forensic analysis can often trace debris, such as identifying Soviet-era components or SpaceX fragments, older, undocumented objects or highly fragmented debris may defy identification.

Gap in governance

The surge in global space activity and the repeated use of rockets and rocket parts have made uncontrolled reentries risky. Earlier this month, pieces from a SpaceX Falcon 9 rocket landed in Poland. But the U.S. Federal Aviation Administration (FAA) said its oversight ended when SpaceX lost control of the rocket. The response exemplified a growing concern: once a space object is no longer actively controlled, no clear authority is responsible for its reentry or any damage it may cause.

In July 2024, China's Long March 5B rocket core stage, a 23-tonne metal behemoth, plunged uncontrolled into the southern Pacific Ocean, narrowly avoiding populated areas. This was the rocket's fourth such reentry event since 2020 alone, and reignited global alarm over space debris.

Unlike more modern rockets, which have parts that are designed and machined to burn up completely during reentry or have the ability to be steered over remote areas, the Long March 5B core stage lacks disposal mechanisms, making its descent a game of orbital roulette. While China has improved reentry predictions, warnings often come too late for other states to put meaningful safeguards in place.

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These incidents have exposed another glaring gap in space governance: there are no binding rules to penalise uncontrolled reentries until damage occurs. Space agencies have condemned such risks as "reckless" but these warnings carry no legal weight without international regulations that commit countries to proactive measures.

The rapid growth of satellite mega-constellations, such as SpaceX Starlink, Amazon Kuiper, and Eutelsat's OneWeb, will add more than 100,000 satellites by 2030, increasing the risk of uncontrolled reentries. Many older satellites also lack deorbiting plans, worsening debris accumulation in orbit. While small satellites usually burn up, larger objects like rocket boosters and fuel tanks often survive reentry, posing threats. In 2022, a fragment of SpaceX's crew capsule Dragon crashed in Australia.

Guidelines such as the UN's rule to have satellites deorbit within 25 years are still voluntary, with only around 30% compliance, leaving thousands of decaying satellites in unpredictable orbits.

What needs to change?

The world urgently needs regulatory clarity to rescue it from the overarching problem: no mandatory oversight exists for reentries unless direct harm occurs. Without urgent reforms, uncontrolled reentries will become more frequent and the affected communities will continue to bear the costs without recourse.

The world needs stronger regulations. For one, COPUOS must push for binding global regulations that require controlled reentries and penalties for non-compliant actors.

In parallel, national governments should strengthen domestic policies, requiring companies to adopt debris mitigation strategies as a condition for getting launch licenses.

Disposal rules should be mandatory as well as require spaceflight entities to have controlled reentries or the ability to move to graveyard orbits (where defunct satellites are moved to avoid colliding with other satellites). And these needs should be enforced through sanctions or launch bans.

Second, improved tracking systems, such as expanding the U.S. Space Fence, can improve monitoring and reentry predictions.

Sustainable space practices, including debris-neutral technologies and reusable rockets, should also be incentivised to reduce clutter in orbit and enhance long-term safety.

Finally, the 1972 Liability Convention must be modernised to include an independent international tribunal with binding enforcement powers.

Space is not a lawless frontier but it risks becoming one without decisive action. The time for voluntary guidelines is over: global cooperation, enforceable rules, and accountability mechanisms must take precedence before the sky truly starts falling.

EUCLID SPACE TELESCOPE DISCOVERS NEW 'EINSTEIN RING' IN NEARBY GALAXY

More than a century ago, Albert Einstein predicted that massive objects like large galaxies and clusters of galaxies act like giant lenses in space by bending light from distant objects.

As seen from an observer on the earth, a rare alignment of a background object with such a lens in the foreground can lead to a visual spectacle. Because of the lensing, the observer sees arc-like structures skirt the foreground lens. Sometimes these arcs are arranged in a circular pattern, which is called an Einstein ring.

Altieri's ring

Recently, the Euclid space mission of the European Space Agency (ESA) spotted an Einstein ring in the galaxy NGC 6505, just 590 million lightyears from the earth. This may sound like a long distance, but on the astronomical scale, the galaxy is veritably in our cosmic backyard.

An astronomer named Bruno Altieri first noticed this Einstein ring in September 2023 in a blurry image captured by Euclid, which ESA had launched only two months earlier.

The image was unfocused by design because in the initial days of the mission, scientists were taking data to test if all of Euclid's systems were functioning properly. Subsequent images of the galaxy yielded focused images, using which scientists confirmed the presence of the ring. It has since been nicknamed Altieri's ring in honour of the scientist who stumbled upon it.

A quirk of the light

Einstein predicted that light will not travel on a straight path when moving in the vicinity of massive objects. He argued that a large object distorts spacetime — the fabric of space and time around it — just like the curvature of a hammock is determined by the mass of the person sitting in it.

This idea forms the basis of Einstein's famous general theory of relativity, which the American physicist John Wheeler summed up perfectly in the following words: "matter tells spacetime how to curve, and curved spacetime tells matter how to move."

The massive object in the foreground, called a gravitational lens, distorts and amplifies the light coming from background sources in the same way a magnifying glass distorts the path of light scattered by a background object, like small lettering on a piece of paper.

That said, a gravitational lens is not as perfectly shaped as a magnifying glass and may produce multiple images of the background object. The number of images depends on the relative distance between the lens and the observer, between the lens and the background object, and the latter's alignment with the lens.

This quirky cosmic phenomenon is called strong gravitational lensing. The multiple images can appear in a variety of configurations around the lens and can assume slightly different shapes and sizes depending on the distribution of matter in it.

An Einstein ring is a special case of strong gravitational lensing. Astronomers discovered the first Einstein ring in 1998, more than 80 years after Einstein predicted their existence. An Einstein ring is created when a gravitational lens distorts light coming from a distant background object, like a star or a galaxy, in such a way that the multiple images created in the foreground form a circular pattern around the lens. This requires a near-perfect alignment between the distant object, the lens, and the observer.

A new set of eyes

All Einstein rings have great scientific value, but Altieri's ring is extra-special because scientists have observed it in a well studied nearby galaxy, NGC 6505. Scientists have found only five other gravitational lenses at similar distances so far. Altieri's ring is composed of the distorted images of another galaxy 4.5 billion lightyears away.

Since NGC 6505 has been known to astronomers since the 19th century, the ring's discovery shows how turning new telescopes to old targets can still yield valuable new knowledge.

The study of Einstein rings can also provide new insights into the universe's expansion and provide opportunities to test the theory of general relativity and investigate distant objects that are otherwise obscured.

They can also help astronomers understand the nature of dark matter, a mysterious form of matter that comprises around 30% of the total mass-energy budget of the universe yet remains undetected because it doesn't interact with the normal matter of which you and I are made. The presence of dark matter can only be inferred from the gravitational effect it has on matter surrounding it — or by bending light around itself.

One of a kind, probably

Following the discovery of Altieri's ring in September 2023, Euclid scientists further investigated this system for more insights using other telescopes. This way, for example, data from the Keck Cosmic Web Imager (KCWI) obtained in March 2024 confirmed the lensed nature of the images.

Together with data from the archives of the Canada-France-Hawaii Telescope and the Dark Energy Spectroscopic Instrument, scientists also confirmed the total mass of stars and the distance to NGC 6505 and the lensed galaxy. They found that the latter is an old galaxy no longer forming stars.

While the discovery of Altieri's ring so early in Euclid's life is exciting for the mission, its scientists sounded caution in a paper published in Astronomy & Astrophysics on February 10: "... the exceptional nature of Altieri's lens means it is unlikely that Euclid will find another lens" closer than around 680 million light-years "with a ring as bright as that observed here."

Euclid began to scan the sky formally on February 14, 2024, and is expected to discover 100,000 new gravitational lenses in the universe. Its chances of discovering lenses so close to the earth, however, remain slim because of the smaller volume of the universe available to look in.

This said, the discovery of Altieri's ring highlights Euclid's potential and the role it can play in advancing our understanding of dark matter.

PLANETARY PARADE: WORLDS ON SHOW

WHAT IS IT?

In a small window of time around February 28, people on the earth were in for a visual treat as seven planets, plus the moon, lined up in the night sky. These events are called planetary parades because the planets seem to line up, one behind the other, in the night sky in the order of their distance from the sun.

Depending on the number of planets involved, planetary parades can be common or rare. For example, a parade of three or four planets occurs once every few years, whereas a parade of seven or eight planets is very rare. The parade around February 28 was of the latter variety, involving seven planets: Mercury, Venus, Mars, Jupiter, Saturn, Uranus, and Neptune.

The closer planets were visible to the naked eye, but the farther ones, especially Uranus and Neptune, required telescopes to see.

The next such line-up is only expected in 2040, involving six planets.

Planetary parades are not particularly significant to scientists. The reason why they happen is simple: the planets of the solar system all orbit the sun in roughly the same plane, called the ecliptic plane. So as they move in their orbits, every once in a while some of them will be visible together from the earth. This wouldn't have been possible if the planets were moving around in different orbits.

COULD EUROPE'S EU TELSAT HELP TO REPLACE STAR LINK IN UKRAINE?

Suggestions that Ukraine could lose access to Elon Musk's Starlink satellite Internet system, which has been vital in maintaining its military communications, have focused investor interest on Starlink's smaller European rival Eutelsat.

• The stock price of Eutelsat, a Franco-British company, has more than quadrupled since the February 28 public showdown between Ukrainian President Volodymyr Zelenskyy and US President Donald Trump.

• Starlink users access the Internet for data or voice communication by using a small satellite dish to bounce signals off a constellation of satellites overhead.

• Ukraine's fixed-line and mobile networks have been badly damaged by bombing since Russia invaded in February 2022, and Starlink has helped Kyiv fill the void by sending tens of thousands of its dishes with terminals.

• Some are made available to civilians, often trying to contact relatives on smartphones. But most are used by Ukraine's armed forces, which also have to contend with heavy signal jamming and interception of communications. Ukrainian units often talk to each other via Starlink, and its services have become virtually indispensable for battlefield command and control.

• Ukraine also used Starlink to guide attack drones until Musk's rocket firm SpaceX curbed the practice two years ago.

• Initially, SpaceX helped to fund the provision of Starlink to Ukraine. The US government then took over, though last month Poland said it had been paying Ukraine's Starlink subscription and would continue to do so.

Do You Know:

• Eutelsat already supports government and institutional communications in Ukraine, and can provide an alternative for certain government and defence applications, according to the company. Since its merger in 2023 with Britain's OneWeb, Eutelsat controls the only operational global-coverage constellation, besides Starlink, of satellites in low earth orbit (LEO).

• Starlink's more than 7,000 LEO satellites, suited to real-time communication, allow it to reach more users around the world and offer higher data speeds. But Eutelsat says that even with only 630 or so LEO satellites, backed up by 35 linked satellites in higher, geostationary orbit, it offers the same capabilities as Starlink in Europe.

• OneWeb terminals, however, cost as much as $10,000, plus a monthly subscription. Starlink charges Ukrainian users a one-time payment of $589 in addition to a monthly subscription of $95-$440, depending on the usage.

• Luxembourg-based SES delivers some satellite services to NATO via its medium earth orbit constellation of O3b mPOWER satellites. But it prioritises corporate customers, governments and militaries, offering no direct-to-consumer services.

HOW DOES A CRICKET BALL SWING? HOW DOES SALIVA HELP IN ITS MOVEMENT?

Indian pacer Mohammad Shami on Thursday (March 6) appealed to the ICC to lift the ban on using saliva to shine cricket balls that was introduced during the Covid-19 pandemic.

• Swing refers to the lateral movement of a cricket ball in the air, before it lands on the pitch. It is essentially a product of an air pressure differential on either side of the ball.

• A thin layer of air forms along the ball's surface after it is released by the bowler. But the so-called "boundary layer" must separate from the surface at some point. Where this separation occurs on either side of the ball determines the air pressure on that side.

• Bowlers generally tilt the seam towards one direction or the other. In a new ball, the raised seam disturbs the airflow on the side towards which it is tilted. This turbulent flow on the seam side sticks to the ball's surface longer and travels faster than the smooth laminar flow on the other side.

• According to Bernoulli's principle, faster travelling air on the seam side results in a decrease of air pressure on that side, making the ball swing in that direction. In theory, a new ball that is held straight — with the seam perfectly aligned to the direction it is travelling — will not swing because the airflow on both sides of the ball is even.

Do You Know:

• Cricketers have traditionally used saliva to shine one side of the ball, smoothen the surface, and make it a tad heavier on that side. The idea is to create as great of a contrast between the two sides of the ball as possible, which helps generate reverse swing. Cricketers have chewed on all kinds of mints and candy to aid the shining process — sugary saliva is heavier, and thus considered more effective for shining a cricket ball.

• Saliva is the most readily accessible shining agent that works the way cricketers want it to. Take sweat, for example. Rubbing the ball with sweat is legal but sweat is not as good a polishing agent as saliva, presumably because it does not contain mucus.

Moreover, the ball tends to soak up sweat — too much sweat can soften the ball which is not something bowlers want. Softer balls do not bounce as much, they do not turn as quickly, or retain much pace after pitching. In short, they are easier for a batter to deal with.

• Other substances like vaseline have also been touted, although they are not as effective. Notably, vaseline is lighter than sweat. As former Indian pacer Ashish Nehra once said: "Vaseline can help keep the shine, but it does not make the ball heavier on one side".

HOW THE WALLACE LINE EXPLAINS THE DIFFERENCE IN SPECIES ACROSS CONTINENTS

Kangaroos and cockatoos are synonymous with Australia and tigers and orangutans with Asia. Both these continents boast rich biodiversity that is also very unique. A simple yet popular way to understand these 'separate greatnesses' has taken the shape of the Wallace line.

What is the Wallace line?

In the late 19th century, the English naturalist Alfred Russel Wallace noticed a dramatic shift in the composition of organisms as he moved from Asia to Australia, New Guinea, and other islands nearby. He posited an invisible barrier in the ocean, later called the Wallace line, running between the islands of Bali and Lombok, striking north between Borneo and Sulawesi before curving south of Mindanao. To him this line was like a fence between the different kinds of animals on the two sides.

Wallace and others conducted eight years of fieldwork to carefully plot the line across many kilometres, in the process laying the foundations of modern biogeography: the study of how species are distributed and how they got there.

Over the years, the line has attracted considerable research interest. "The Wallace line … ties partly into the theory of evolution. Nowhere else on the earth do you see such a dramatic shift over such a narrow distance. Organisms are not just scattered randomly," Jason R. Ali, honorary associate researcher at the Senckenberg Society for Nature Research, Germany, said.

What did Wallace find on Sulawesi?

At their closest, the islands of Borneo and Sulawesi are just over 20 km apart yet they support very distinct plants, mammals, and birds. Wallace was more baffled by Sulawesi. It's one of the largest islands in the archipelago and home to species found nowhere else on the planet, including tarsiers (family Tarsiidae), the lowland anoa (Bubalus depressicornis), and the mountain anoa (Bubalus quarlesi), which are both of Asian origin. Yet Sulawesi is also home to Australian marsupials like the dwarf cuscus (Strigocuscus celebensis).

The island frustrated Wallace, who repeatedly redrew his line because he was unsure whether it belonged to Asia or Australia. He wrote in 1876 that the animals here showed "affinities" to Africa, India, Java, the Maluku Islands, New Guinea, and the Philippines.

Why do Sulawesi have species from both sides of the line while most others didn't? Wallace had deduced the essential answer all those years ago but it has accrued greater depth with more research over time.

What does the ancient past say?

The line is part of the Malay archipelago, a geologically complex region with more than 25,000 islands.

Wallace figured that Sulawesi's animal distribution could be explained if some of these islands had been joined with the Asian mainland in the past. As the islands broke off and drifted apart, the

ancestral species on each island would have become isolated and evolved independently, creating the distribution Wallace saw in the 19th century. Since then, researchers have expanded this understanding by going further back in time. Millions of years ago, Australia broke off and drifted away from Antarctica. An ocean emerged in the growing gap and the water currents in its depths cooled the planet.

Meanwhile, Australia drifted north into Asia, creating the volcanic islands of Indonesia. Various studies found that variations in monsoons, aridity, and sea levels between these islands spurred island species to adapt to their new conditions and diversify, until as recently as four million years ago.

The movement of continents was one part of the puzzle. A study published in 2023 revealed another when scientists took a closer look at how species across the Wallace line were related. They analysed data of 20,000 species of birds, mammals, reptiles, and amphibians. Despite global cooling, they found, Malay's tropical islands stayed warmer and wetter than Australia. Thus, Asian fauna used these islands as stepping stones to Australia whereas Australian species, having evolved in cooler climes, struggled to make their way across the islands to Asia. "Species from Asia can migrate through the rainforest-rich northern route, as the ecosystems are similar to their origins," Ali said. "Australian species can only move into Asia along the southern route, around Timor and nearby islands. This path emerged much later — only a few million years ago — making migration more challenging for Australian species."

Does the line matter?

By combining insights from multiple disciplines, the aforementioned studies helped explain Wallace's findings to a degree that revealed the line to be a mirage: it was visible but the real reasons why it exists are rooted in the deeper facts of nature.

Today, even newer tools have joined older ones to further clarify the region's biogeography. "We are learning more about which adaptations allow species to move throughout the region by using advanced evolutionary modelling and computer simulations," Alexander Skeels, a postdoctoral research fellow at Australian National University, Canberra, said.

The factors that influenced species dispersal and settlement in the past are still relevant today.

The Indo-Malayan archipelago faces one of the world's highest rates of habitat destruction. Understanding its biography will be crucial for ecologists to predict how species will respond to the loss of their homes, compounded by the effects of climate change.

"New technologies are helping us understand that 'lines' that separate Asia and Australia may be simplifying the story," Skeels said. Ali echoed him, saying redrawing the Wallace line or any other line like it is "futile".

"Different datasets and methods will reveal different results. These boundaries will always be fuzzy. Instead of redrawing lines, it is more valuable to focus on how these species will be affected by habitat destruction in future," Ali added.

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'WORLD'S COSTLIEST COW': BOOMING IN BRAZIL, BUT DWINDLING IN INDIA

In Brazil, where Ongole cows make up 80% of its cattle heads, one of them sold for a whopping 4.38 million USD. Back in India, the original home of the Ongoles, the breed is fighting for survival. A government-run farm is attempting to change that.

• In February, an Ongole purebred cow, Viatina-19, was sold for a whopping 4.38 million USD (25.7 million Brazilian Real or INR 40 crore) in Brazil's Minas Gerais. It's a breed that thrives in Brazil – about 80 per cent of the country's 226 million cattle are Ongoles.

• In Brazil, the world's top beef exporter where the cattle industry is a primary driver of its economy, the Ongoles are raised for their meat. As the country attempts to capture newer markets, Brazilian breeders are racing to raise bigger, meatier supercows such as the Viatina-19.

• The snowy-white, muscular Viatina-19, weighing 1,100 kg, was bought at an auction by three breeders — Casa Branca Agropastoril, Agropecuária Napemo, and Nelore HRO — who will now use her to breed cattle with superior characteristics based on her genetic traits.

• However, back in India, the original home of the Ongoles, the breed is facing the threat of extinction, its numbers halving from 15 lakh in 1944 to 6.34 lakh in the 2019 Livestock Census.

• In a country where the population of indigenous cattle has dropped by nine per cent between 2007 and 2012 and six per cent between 2012 and 2019, the fate of the Ongole breed is somewhat predictable. The price of the cattle, too, is relatively low in India – Rs 1 lakh a cow and Rs 10 to 15 lakh for a prized bull.

• Despite government efforts to promote conservation and rearing of desi breeds through schemes such as the Rashtriya Gokul Mission (RGM), launched in 2014, farmers prefer exotic and crossbred cattle that yield more milk when compared to the indigenous varieties. This is reflected in the 29.5 per cent jump in the population of exotic and crossbred cattle – from 39.73 million in 2012 to 51.47 million in 2019.

Do You Know:

• In 2012-13, the population of the four milch breeds, together with their upgraded progeny, was assessed at 11.29 million. Farmers would, no doubt, be happy to maintain such high-yielding animals. But on the other hand, the corresponding populations of the 7 dual-purpose and 26 draught breeds were 11.76 million and 14.88 million, respectively.

• With decreasing demand for bullocks, farmers will prefer breeding the cows from these with bulls of the more profitable milch cattle breeds. This is already happening in buffaloes, where owners of Banni, Surti, Bhadawari and Pandharpuri breeds use Murrah bulls for producing more high milk-yielding progeny, without bothering to conserve the former breeds.

MAMMOTHS, MICE AND DYSTOPIAS BECOMING REALITY

For about two years now, people have been promised a discount Jurassic Park, come to life. The woolly mammoth, which has been extinct for about 4,000 years, has been on the verge of being "brought back". The company that is seeking to achieve this feat has received much publicity for its claims. Perhaps that's why, to sate an eager public, it has "created" woolly mice as a trailer to

the much larger main attraction in years to come. But, as science imitates science fiction, it might do well to look at the lessons from the latter.

The new species — mice that sport a luxurious coat (imagine the pesky rodent with the fur of a chestnut golden retriever) — has been created through gene editing. Colossal Biosciences, the company behind the creature, has cited the critter as further support for the case for bringing back the mammoth before the end of the decade. Questions, though, remain. First, a species isn't just about how it looks. Will "de-extinct" mammoths behave in ways that the originals did? A mammoth that doesn't act like one is just a hairy elephant. More important than the how, though, is why. Why bring back animals that have died out? Wouldn't working towards preserving the ones that are still around be a better bet?

SYMBIOSIS

Does anemonefish actively feed its hosts in the wild?

Living symbiotically with sea anemones that shelter them from predators, anemonefish (Amphiprion clarkii) drive away organisms that nibble at their hosts. Anemonefish have also shown they will provide their hosts with the food given to them by humans. A new study shows such feeding behaviour does happen in the wild by investigating food provisioning by anemonefish and its effects on the symbiotic relationships. When anemonefish are provided with foods of various sizes and types in the field, they selectively consume small animal food (krill, clams, squid, and fish) and green macroalgae of small size, while providing larger pieces of animal food to their hosts. Food provisioning positively influences the growth of host anemones as growth of anemones directly benefits anemonefish—the number of eggs laid increases when the hosts are larger, and since anemonefish cannot leave their sea anemone, feeding their hosts is extremely important.

A FINGER ON THE CARBON BUTTON

Q: What is carbon intensity?

A: Carbon intensity is a useful way to measure how much carbon a particular sector is emitting and how it has increased or decreased over time. Usually, sectors have their own ways to measure their progress.

The steel sector may focus on the number of tonnes produced annually; the medical insurance sector may focus on the number of claims successfully fulfilled; and HR services may focus on how many hours of unproductive work they may have done away with.

The government of a country may also measure its own development by tracking, say, the GDP per capita.

In a world that is warming rapidly and desperately needs to reduce its greenhouse gas emissions, carbon intensity adjusts those existing metrics to include the amount of carbon dioxide produced.

For example, the carbon intensity of the steel sector can be measured as the number of tonnes produced per tonne of carbon dioxide emitted. An entire country's carbon intensity can be understood by dividing the growth in GDP per capita by the amount of carbon dioxide emitted. And so on.

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Recently, China said it had lowered its carbon intensity by 3.4% in 2024, missing its target of 3.9%. Some economists have said its road ahead is difficult considering China has committed to having its carbon emissions peak before 2030.

TARGET TO LIMIT GLOBAL WARMING TO 1.5°C IS HANGING BY THREAD: IPCC CHAIR

The world's aspiration to limit global warming to 1.5°C is still possible but "hanging by a slender thread", Jim Skea, chairperson of the United Nations Intergovernmental Panel on Climate Change (IPCC), which assesses climate change science, said here Thursday.

• Skea said that with warming having exceeded 1.5°C in 2024, the world is entering, even if temporarily, a zone with high risks of climate change. The impact could be limited by utilising available options in energy supply such as wind and solar energy and by turning to adaptation opportunities to cut risks of climate change.

• "After the IPCC special report on the 1.5 degree warming was published in 2018, I was quoted as saying that limiting warming to 1.5 °C was possible within the laws of chemistry and physics, and that is still true. But that aspiration is hanging by a slender thread," Skea said at The Energy and Resources Institute's (TERI) World Sustainable Development Summit. Under the Paris Climate Accords, nearly 200 countries decided to keep the increase in temperatures below 2°C above the pre-industrial levels, and preferably limit it to 1.5°C.

• The three-day TERI summit, which began Wednesday, is being held days after IPCC held a crucial meeting in Hangzhou, China, to set the future course of action on producing the next set of reports on the latest state of earth's climate.

• The IPCC's synthesis report integrating the contributions of three working groups and its special report will be produced during the current seventh cycle and released in the second half of 2029.

Do You Know:

• The WMO assessment said that the five-year period between 2023 and 2027 was almost certain to be warmer than the previous five year period between 2018 and 2022. The developing El Nino in the equatorial Pacific Ocean is also expected to play a role in this. Usually, El Nino has the impact of increasing the global temperature in the year after it develops. That means that 2024 could receive an additional warming pressure due to El Nino.

• The 1.2 degree Celsius warming over India is considerably less than the 1.6 degree Celsius, or higher, that has been experienced over the global land surface. This is not surprising, but it also does not mean that the threat of climate change is less in India compared to other areas.

• India is located in the tropical area, quite close to the equator. The increase in global temperature has been more pronounced in the higher altitudes, near the polar regions, than near the equator. This is attributable to a complex set of atmospheric phenomena, including heat transfers from the tropics to the poles through prevailing systems of air circulation.

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COP30 HOST BRAZIL CALLS FOR ADDITIONAL STRUCTURES TO ENSURE CLIMATE COMMITMENTS ARE DELIVERED

Brazil, the host of this year's annual climate conference, COP30, has called for setting up of "additional" multilateral mechanisms "complementary" to the Paris Agreement framework to ensure commitments by countries on climate action are fulfilled.

• In an interaction with journalists here Thursday, Brazil's Minister for Environment and Climate Marina Silva acknowledged that the US pull-out from the Paris Agreement would hurt progress on climate action but said multilateral process was still the only way to effectively deal with the climate crisis.

• Minister Silva, who was in New Delhi to attend the annual World Sustainable Development Summit organised by TERI, said the idea is "to propose this discussion on (building) structures that could be complementary to the (UN) process to follow up on the commitments that have been made".
—She, however, clarified that this was not part of the negotiation agenda at COP30, scheduled to be held in November in the Brazilian city of Belem. "It is important to fully acknowledge that…no country can do this on its own, all parties of the UNFCCC (UN Framework Convention on Climate Change) must attend to it together. This (the discussion on this proposal) is something that will take place in the action agenda of COP30… This is not part of the negotiations," she said.

• Action agenda refers to discussions that happen on the sidelines of COP meetings. These are voluntary and meant to encourage countries to take additional measures to fight climate change. Negotiations are the formal process through which decisions are taken by consensus. These decisions become international law.

• On the US withdrawal from the Paris Agreement, she said it was incumbent upon other countries — Brazil, India, China, the EU, the UK and others — to work more closely to strengthen the multilateral system.

Do You Know:

• In 2025, Brazil is hosting the 30th Conference of the Parties (COP30), which will take place in Belém, Pará. The chosen city will provide the world with a unique platform to discuss climate solutions, firmly rooted in the heart of the Amazon.

• The COP is the supreme decision-making body of the Convention. All States that are Parties to the Convention are represented at the COP, at which they review the implementation of the Convention and any other legal instruments that the COP adopts and take decisions necessary to promote the effective implementation of the Convention, including institutional and administrative arrangements.

• A key task for the COP is to review the national communications and emission inventories submitted by Parties. Based on this information, the COP assesses the effects of the measures taken by Parties and the progress made in achieving the ultimate objective of the Convention.

• The COP meets every year, unless the Parties decide otherwise. The first COP meeting was held in Berlin, Germany in March, 1995. The COP meets in Bonn, the seat of the secretariat, unless a Party offers to host the session. Just as the COP Presidency rotates among the five recognized UN regions – that is, Africa, Asia, Latin America and the Caribbean, Central and Eastern Europe and

Western Europe and Others – there is a tendency for the venue of the COP to also shift among these groups.

'ENDOGAMY KEY CAUSE OF POPULATION-SPECIFIC DISEASES'

Endogamy, the practice of marrying within small communities, was the primary cause for population-specific diseases in India, said a recent study led by Bhatnagar Fellow and senior scientist at the Council of Scientific and Industrial Research-Centre for Cellular and Molecular Biology (CSIR-CCMB) K. Thangaraj.

Researchers found a significant number of disease-causing genetic variants, many of which were unique to specific populations. Earlier studies had also shown many population-specific hereditary diseases most often associated with novel genetic mutations.

One of the key findings of this study has been that the widespread prevalence of ankylosing spondylitis, a type of arthritis that causes inflammation in the joints and ligaments of the spine, is linked to the 'HLA-B27:04 risk allele', a genetic variant that increases the likelihood of developing a disease, said an official release on Tuesday.

Risk factor

"We found a high incidence of ankylosing spondylitis disease in the Reddy community, who dwell in a specific geographical region of Andhra Pradesh", said rheumatologist Sarath Chandra Mouli Veeravalli from Krishna Institute of Medical Sciences (KIMS), Hyderabad, one of the authors of this study.

Lead author Pratheusa Machha explained that 281 high-coverage whole exome sequences were analysed from four anthropologically distinct populations.

"We examined several key factors, such as extent of inbreeding and novel genetic variants in populations. We also looked pharmacogenomic markers that influence drug metabolism to understand why different drugs seem to work differently in different populations," Ms. Machha said.

The study also uncovered novel genetic variants associated with drug metabolism, with implications for personalised medicine, especially in response to some of the common drugs, such as Tacrolimus (an immunosuppressive drug) and Warfarin (anticoagulant).

"We observed genetic variations in the genes that alter the drug response, which differ across populations, and hence provide opportunity for developing targeted drugs and improving health outcomes", said co-author Divya Tej Sowpati.

Dr. Thangaraj pointed out that the study forecast the impact of endogamy in causing population-specific genetic diseases and drug responses.

"This emphasises the need for appropriate genetic screening, counselling and clinical care for the communities that are vulnerable to various health conditions," Dr. Thangaraj said.

Major step

The study was a major step towards our understanding of the genetic underpinnings for India's unique genetic architecture.

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It could play an important role in the development of more effective diagnostic and therapeutic strategies, said CSIR-CCMB director Vinay K. Nandicoori.

The findings were recently published in the Journal of Genetics and Genomics, the release added.

GENE THERAPY FOR MAPLE SYRUP URINE DISEASE SHOWS PROMISE

Scientists have created a new gene therapy for a debilitating genetic disorder called maple syrup urine disease (MSUD). The treatment can prevent recurrence of deadly symptoms in a cow-calf born with the disease. Their protocol could one day be translated into a much-needed therapy for patients with two types of classic MSUD, who currently face limited treatment options. Results were published in Science Translational Medicine.

Classic MSUD arises from mutations in the three genes that encode the protein subunits of the branched chain alpha-keto acid dehydrogenase complex (BCKDH). The loss of this complex prevents the body from properly breaking down several amino acids, eventually leading to neurological symptoms and life-threatening brain damage. To prevent complications, patients must either follow a very strict diet low in protein or receive a liver transplant.

Now, Dr. Jiaming Wang from the University of Massachusetts Chan Medical School, Worcester, Massachusetts and others present a new gene replacement therapy for two types of classic MSUD that uses an adeno-associated viral vector to deliver functional gene copies of BCKDHA and BCKDHB systemically. The therapy worked as intended in knockout cells and was safe in wild-type mice, and also prevented death after birth in mice deficient in either BCKDHA or BCKDHB.

The scientists visited a farm where some newborn calves had perished from classic MSUD. They administered a single dose of their gene therapy, modified to carry bovine genes, to the animal. Over the next two years, the calf grew normally and was eventually able to transition to a normal bovine diet high in protein.

The team plans on further work to characterize the long-term impact of the gene therapy on BCKDH levels in the brain, as well as to determine the treatment's benefits on cognition and behaviour over longer study periods.

ICMR REPORT LINKS HIGH LEVELS OF SELENIUM IN WHEAT TO HAIR LOSS

Three Zika virus cases in Gujarat detected between November 2016 and February 2017 were kept under wraps till WHO announced the outbreak on May 26, 2017;the Health Ministry had informed WHO about the three cases on May 15, 2017. The case of high levels of selenium in wheat distributed by Public Distribution System (PDS) outlets causing increased selenium levels and sudden hair loss in over 300 people in Shegaon taluka in Buldhana district, Maharashtra, seems to be following the same pattern — reluctance of the Health Ministry to keep all the stakeholders informed and make the findings public, and then claim there is no conclusive evidence to link high selenium levels in wheat with sudden hair loss.

Between end-December 2024 and January this year, over 300 cases of sudden hair loss were reported in people living in 18 villages in Shegaon taluka. From January 14-17, a team of scientists from ICMR institutes and AIIMS Delhi visited three villages and collected samples from people affected and unaffected (control) by sudden hair loss. Samples of wheat and rice from affected and unaffected households and from ration shops were collected, as well as water and soil samples. Contrary to claims made by government sources, no other samples of food items were collected

for testing by the ICMR-AIIMS team.The samples were sent for testing to ICMR-National Institute for Research in Environmental Health (NIREH) in Bhopal and AIIMS Delhi.

A PTI report published on February 25 said that very high levels of selenium found in wheat was the reason for the sudden hair loss, based on an independent investigation by Dr. Himmatrao Bawaskar of Bawaskar Hospital and Research Centre in Raigad. The ICMR-AIIMS team found high selenium in blood and hair samples of affected people, and the link between high selenium levels in wheat and hair loss nearly a month before Dr. Bawaskar's investigation revealed them. But the findings of the ICMR-AIIMS team have not been made public till date.

In an interim report submitted to the Health Ministry on January 28, ICMR clearly said that the amount of selenium detected in the blood of affected individuals was about 31 times higher than controls. The selenium content was also high in wheat samples collected from two ration shops and a few households of affected people. Water samples were tested for nearly two-dozen heavy metals, and all were within permissible limits. Based on these findings, the interim report says that high selenium levels in wheat could have caused sudden hair loss. Intake of excessive selenium through food and/or water leads to a condition called selenosis, which is characterised by hair loss, which is what was seen in people in Shegaon taluka.

Blood samples tested by ICMR-NIREH found that people with sudden hair loss had selenium levels nearly 31 times higher than individuals without hair loss from households with no cases of hair loss in the family. Selenium levels in the affected people were three times more than the unaffected individuals from the same households as the affected people. Blood samples tested by AIIMS Delhi found that the selenium levels were about 25 times more than the controls, and the selenium levels in hair samples from people with sudden hair loss were also high compared with the control group.

Testing by ICMR-NIREH of wheat samples supplied by two ration shops to the affected people living in two villages had selenium two-eight times higher than normal values. The selenium level in the wheat sample collected from a household where an affected person was living was high and comparable to the selenium levels in wheat available at the ration shop. Compared with households of unaffected individuals, people from affected households consumed wheat and rice supplied by PDS shops. The presence of wheat with high levels of selenium both in the ration shops and in the affected households clearly establishes that wheat distributed by the PDS outlets as the source of selenium for the affected people.

As per a Letter published in 2016 in the Indian Journal of Dermatology, Venereology, and Leprology, a study by the SMS Medical College and Hospital in Jaipur found 15 individuals from two families with high to extreme selenium toxicity. Selenium in wheat samples was 250 times higher. As per a 2004 reporting Down to Earth, large tracts of agriculture lands in Hoshiarpur and Nawanshahar districts in Punjab are impacted and people in many villages in these districts are affected by selenium toxicity.

Investigations needed

It must be noted that while every family receives PDS wheat, not everyone eats this wheat. Many families have wheat grown in their own field. As a result, the wheat samples collected from houses were not necessarily received from PDS shops. Curiously, people who had sudden hair loss in end-December 2024 had good hair regrowth even though they continued to consume wheat supplied by PDS shops. This suggests that the exposure to high selenium was only for a short time, probably because only a few sacks of wheat had high selenium levels. The cases were reported only from

12-15 villages, again supporting the hypothesis that only a few sacks would have had high selenium. It is therefore necessary to carry out further investigations by testing additional wheat samples from the entire supply chain of PDS to ensure that high selenium wheat is not present in the supply chain.

MEDICAL WEARABLES TECH: AN EARLY WARNING SYSTEM FOR YOUR HEALTH

Over the past decade, patient care has seen a paradigm shift, with advancements in medical wearables turning out to be a powerful catalyst in the management of chronic illnesses such as diabetes, hypertension and cardiovascular diseases.

These gadgets are no longer merely lifestyle accessories but are increasingly becoming essential tools that empower individuals to monitor their health in real-time and take a more proactive approach to their healthcare management.

Healthcare professionals say this tech has helped elevate people's awareness about risk factors of lifestyle diseases like heart disease and diabetes and has changed their focus from reactive healthcare approaches to more proactive and preventive care.

A seismic shift post pandemic

Medical wearables such as smartwatches, fitness trackers, and biosensors are electronic devices designed to be worn on the body to monitor and manage various health parameters: blood sugar levels, heart rate, physical activity, sleep patterns, and even blood oxygen levels.

Whether a fitness enthusiast uses a smartwatch to track her daily activity or a diabetic patient utilises a continuous glucose monitor (CGM) to check blood glucose levels, these devices promise real-time data and valuable insights to help both patients and healthcare providers make informed decisions.

While CGMs are predominantly used for diabetes management, other medical wearables are making waves in cardiac and respiratory health. Rahul Baxi, a diabetologist in Mumbai, notes that the United States Food and Drug Administration (FDA) granted approval to the Apple Watch to detect atrial fibrillation, a serious heart condition. "There have been numerous instances where the Apple Watch has alerted individuals about irregular heart rates, allowing for early intervention and the prevention of life-threatening complications," he says.

Wearables have also played a vital role in monitoring respiratory health, especially during the COVID-19 pandemic. Devices that track respiratory rates, oxygen saturation, and pulse rates have become essential tools for patients with chronic respiratory conditions such as asthma or COPD (chronic obstructive pulmonary disease).

The COVID-19 pandemic was a turning point for the adoption of wearable medical devices. "There is a clear distinction pre- and post-COVID-19. After the pandemic, the wearable medical market has exploded. People are now more aware of the importance of monitoring their vitals," Dr. Waghmare explains.

During the pandemic, devices such as pulse oximeters became household essentials and the trend has only accelerated since then. "Today, people in their 40s and 50s are increasingly using Fitbits, Apple Watches, and other devices to monitor their heart rate and blood pressure, helping them stay more informed about their health," he adds.

Empowering patients

The visual feedback that devices offer often serves as a wake-up call, encouraging healthier lifestyle choices, say healthcare experts.

"CGMs have helped patients see how their sugar spikes after eating certain foods, and it motivates them to make changes," says Dr. Baxi. For instance, a patient might notice that their sugar levels rise more after eating idli compared to sprouts, prompting them to choose healthier alternatives. "This real-time data makes a far greater impact than just telling someone to avoid certain foods," he adds. "It empowers them to take control of their health. We are seeing patients who are tracking their sleep quality, physical activity, and stress levels and are taking proactive steps towards maintaining long-term health."

This constant data flow is crucial for the early detection of health issues. For instance, patients with cardiovascular conditions can receive immediate alerts if irregular heart rhythms are detected, allowing for timely interventions before complications arise.

"Wearables have shifted the focus from reactive treatment to proactive prevention, enabling individuals to monitor their health continuously and seek medical attention before major issues arise," says Rushikesh Patil, a cardiologist in Mumbai.

Better patient-doctor interaction

Medical wearables are also enhancing the interaction between patients and doctors, particularly in the realm of tele-health. By integrating data from wearables, tele-health platforms provide healthcare providers with a comprehensive view of a patient's health before consultations. This allows for more accurate diagnoses and the development of personalised treatment plans.

Remote patient monitoring has been significantly improved by wearable devices such as CGMs, which allow healthcare providers to monitor patients from afar and make real-time adjustments to treatment plans.

Dr. Baxi, for instance, has used CGMs to track his patients' blood sugar levels remotely. "With CGMs, I can monitor my patient's condition from anywhere in the world and make real-time adjustments to their insulin dosage," he says. This level of monitoring was not possible before the advent of wearables, making healthcare more accessible and convenient for the patient.

Dr. Waghmare says wearables have improved the compliance rate to treatment as, traditionally, patients would return for a check-up every few months, leaving long gaps between consultations. "Previously, we relied on infrequent visits to adjust medication dosages based on blood pressure and heart rate. But now, with wearables, we can monitor these vitals continuously and adjust treatment plans much more effectively," he says.

This real-time data helps doctors optimise medication dosages, ensuring patients receive the best care for their recovery and for the improvement of their long-term survival. "We can confidently adjust the dose of medicines based on real-time heart rate or blood pressure data, which was not possible before these devices," he notes.

Future of health monitoring

The future of medical wearable technology looks even more promising, with researchers developing innovative health-monitoring tools that will seamlessly integrate into daily life. Smart

textiles, for example, are being developed to embed sensors directly into clothing. These smart fabrics could track heart rates, respiratory rates, and even glucose levels, offering non-invasive health monitoring in real time.

Non-invasive glucose monitoring is another exciting area of research. Scientists are exploring methods to measure glucose levels through biofluids such as sweat, saliva, or tears, potentially eliminating the need for devices that puncture the skin. As these technologies continue to evolve, wearable devices will become even more integrated into everyday life, offering seamless and non-invasive health monitoring for all users.

Affordability, a concern

Despite the numerous benefits of medical wearables, affordability remains a significant barrier, especially in countries like India. Devices like CGMs can be expensive, with the cost of sensors adding up over time. Gaurish Kenkre, general manager and physiotherapist, Atharv Ability, Mumbai, acknowledges that only a small percentage of his patients can afford CGMs and other medical wearables, primarily due to their high costs.

"In India, a CGM sensor costs around ₹5,000 for two weeks, which means patients spend roughly ₹10,000 a month. That is not affordable for everyone," Dr. Baxi acknowledges.

However, he emphasises that even short-term use of these medical wearables can provide valuable insights. "For example, even using a CGM for a few weeks can help patients understand how their diet, exercise, and medications affect their blood sugar levels," he says. This information can then be used to make long-term lifestyle changes, improving overall health outcomes.

Dr. Patil says there is also another issue to consider: there are many false positives and false negatives. "Individuals should not panic due to the results: they must consult their doctor," he says.

As technology continues to evolve, medical wearables are set to play an increasingly vital role in healthcare, not just for diabetes management but across various medical fields.

HARNESSING GUT MICROBIOME TO HALT VITILIGO

The current decade will probably be known as the decade of the gut, given the incredible number of significant biological connections we are making between the gut and human well-being. However, this is not about the gut per se; this is about the role of gut-friendly bacteria in the process of re-pigmentation, particularly in persons with vitiligo.

Vitiligo is a chronic auto immune disorder where the body's defence system begins to attack the pigment-producing cells and causes de-pigmented white patches on the skin. While usually the condition can be only cosmetic, these patches on the skin can be stigmatising for the patient, particularly if they are present on the face or arms, and thus obvious to others. New research from Northwestern University from a pre-clinical trial in mice has shown that a natural compound derived from gut-friendly bacteria significantly slows down the progression of vitiligo and may restore pigmentation. The findings, if substantiated through rigorous double blind random control clinical trials, could offer hope to millions affected by the autoimmune disease.

It is estimated that vitiligo affects 0.5% to 2% of the global population and is linked to other health challenges, including for some persons, higher risks of cardiovascular disease, psychological

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distress, and endocrine disorders. The prevalence of vitiligo in India has been invariably reported between 0.25% and 4% of dermatology outpatients across studies from India, and up to 8.8% in Gujarat and Rajasthan, as per a paper in the Indian Dermatology Online Journal. Studies and observations have recorded an erosion of self confidence among those with vitiligo, resulting in an impact on the mental health of the individual.

WHY IS INDIA STARING AT AN OBESITY CHALLENGE?

The story so far:

Earlier this week, Prime Minister Narendra Modi, in his 'Mann Ki Baat' radio programme, highlighted the alarming increase in obesity in the country, particularly among children, and noted that obesity affected one in eight Indians. Mr. Modi urged people to reduce oil consumption by 10% each month and stressed that to build a healthy nation, obesity needed to be addressed.

What is the scale of the problem?

Overweight and obesity are defined by the World Health Organization (WHO) as abnormal or excessive fat accumulation that presents a risk to health. Data from the National Family Health Surveys (NFHS) reveals that obesity has been increasing across India over the years. The percentage of women who were overweight/obese grew from 20.6% during NFHS-4 (2015-16) to 24% during NFHS-5 (2019-21). The percentage of overweight/obese men increased from 18.9% to 22.9% during this period. Urban numbers were significantly higher than rural numbers. A 2023 research paper in The Lancet Regional Health Southeast Asia that analysed the NFHS-5 data, found the prevalence of abdominal obesity (assessed through waist circumference) in the country was 40% in women and 12% in men.

Childhood obesity is also an area of concern: the percentage of children under five who were overweight rose from 2.1% to 3.4% from 2015-16 to 2019-21, as per NFHS data. With older children the figures are higher — the World Obesity Atlas 2022 estimates that India will have a child obesity prevalence of 10.81% among 5 to 9-year-olds and 6.23% among 10 to 19-year-olds by 2030.

What are the health risks?

According to the WHO, obesity in adulthood is a major risk factor for the world's leading causes of poor health and early death. These include cardiovascular disease, several common cancers, diabetes and osteoarthritis. India leads the world in the number of people with diabetes at an estimated 101 million. The burden of cancer is on the rise; from 14.6 lakh cancer cases in 2022, the number is projected to go up to 15.7 lakh in 2025, as per the Indian Council of Medical Research-National Cancer Registry Programme. Moreover, cardiovascular disease remains one of the leading causes of death and disability, reportedly affecting Indians at least 10 years earlier than in other countries. In fact, non-communicable diseases (NCDs) now account for about 60% of all deaths in India.

Being overweight in childhood and adolescence, the WHO says, affects children's and adolescents' immediate health and is associated with greater risk and earlier onset of various NCDs. It can also have adverse psychosocial consequences affecting school performance and quality of life, compounded by stigma, discrimination and bullying. Children with obesity are likely to be adults with obesity.

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Why is obesity on the rise?

"Rising levels of obesity in urban India are due to a combination of multiple factors: unhealthy diets loaded with ultra-processed foods, lowered levels of physical activity and even air pollution which provokes inflammation that predisposes the body to cardio-metabolic diseases and visceral adiposity in the body," says K. Srinath Reddy, distinguished professor of public health, Public Health Foundation of India.

Cost is another factor. Low-income households, especially those that depend on the public distribution system, eat more carbohydrates through rice and wheat, says public health professional Vandana Prasad. "You can instruct people to eat better, but it is not possible if these foods are unaffordable. Indian diets, especially among poor families, are deficient in iron and proteins. Foods like fruits, vegetables, pulses, dairy and animal-based foods are all expensive. While at present obesity is still primarily an urban, middle class phenomenon in India, it is already rising among the rural poor, which may soon overtake other segments," she adds.

A study in The Lancet Global Health last year said almost half of all Indians are not sufficiently physically active. "Even as indoor sedentariness is increasing due to the seated nature of office work and use of digital devices, outdoor conditions are not conducive to safe and pleasurable physical activity," points out Dr. Reddy. The absence of safe cycling lanes and pedestrian paths are compounded by dimly-lit lanes; green spaces available for recreational physical activity are shrinking while traffic density and rising street crime deter walkers in many urban zones.

Is obesity being measured correctly?

While the usual metric to measure obesity is the Body Mass Index (BMI), there has been a growing debate about its limitations. BMI does not indicate how much of the weight is fat and where the fat is distributed in the body. Fat in the abdomen particularly — something that Indians are genetically predisposed to accumulating — contributes to metabolic syndrome, a group of risk factors that increases the chances of developing type 2 diabetes, stroke and heart disease.

This January, experts in India issued updated guidelines for obesity treatment and diagnosis that placed special emphasis on abdominal fat distribution. The classification introduces two stages in obesity — the first stage where there is increased adiposity without discernible effects on organ functions or daily activities, and the second, where both physical and organ functions are impacted. It recommends the use of waist circumference or waist-to-height ratio and body fat measurements, alongside BMI, to diagnose obesity.