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'Need policy for affordable bioethanol'

Crucial point: In affordability, lies wider adoption, says Honda Motor Co.'s chief engineer Ueda .GETTY IMAGES/ISTOCK

Press Trust of India
NEW DELHI

India has the advantage of achieving carbon neutrality through bioethanol and renewable energy-based electrification but the government needs to create a mechanism to make prices of bioethanol fuel more affordable to make it economically viable for users, Honda Motor Co Ltd. chief engineer Hiroya Ueda said on Tuesday.

Speaking at auto industry body SIAM's 3rd International Symposium for Thriving Eco-Energy in Mobility event, Mr. Ueda said ethanol had an edge over existing fuels in terms of cutting carbon emissions but the running cost was higher due to low fuel efficiency.

'Improve fuel efficiency'

Stating that the running cost of fuel will be an issue and few initiatives could be taken to raise the use of bioethanol, he said, "The government should create a mechanism to make fuel pricing more affordable and maintain economic viability for users through its policies."

At the same time, he said vehicle manufacturers should continue to take initiatives to improve fuel efficiency.

"For the ethanol fuel to remain economically viable the fuel cost per km must be kept the same or lower compared with gasoline vehicles. To achieve this, initiatives including reducing tax on ethanol should be considered," Ueda said.

Reducing price

He further said, "One way could be to reduce the price of E100 (ethanol 100) from ₹95% litre to ₹65 per litre just to bring down the vehicle running cost." Parallelly, he added, "OEMs also need to improve the vehicle mileage to achieve this."

Mr. Ueda also pointed out promotion of ethanol fuel will have a beneficial impact on the farmers of India, where agriculture is prevalent and majority of the population is in rural areas.

It is important to keep in mind the socio-economic development of the rural community, he said.

"Since ethanol can be supplied through existing gasoline stations, it seems that availability will not be an issue," Mr. Ueda said, adding that for CNG, the infrastructure is gaining momentum but expansion will be gradual.

Asserting that in terms of the environmental benefit, ethanol has an edge, he said, "From a long-term perspective both flex-fuel vehicles and electric vehicles will be required for India's carbon neutral commitment.

Increasing ethanol concentration results in decreased fuel economy while if the price of ethanol remains the same as that of gasoline customers will have to bear higher running costs.

Arguing that ethanol has an edge over other existing fuels in terms of cutting carbon emissions, he said, "It is important to further promote the use of bioethanol fuel."

In terms of electrification, he said with the adoption of renewable energy in the near future electricity would become more environmentally friendly and hence it is also important for OEMs to work on delivering electric vehicles.

On Honda's bioethanol initiative in India, he said learning from the company's experience in Brazil, the company has launched the CBF300 Flex Fuel in the country.

Notes from Davos

Chandrajit Banerjee

The first day of the 2025 World Economic Forum (WEF) meeting began with Alpine sunshine casting a golden glow over the snow-lined Promenade in Davos. By day two, the temperatures dipped further, but the bustling energy on the streets stayed undeterred.

This year's theme, "Collaboration for the Intelligent Age", feels tailor-made for India. As the fastest-growing economy, India is setting benchmarks in areas like digital transformation, renewable energy, and innovation. From transforming global fintech, green hydrogen leading the clean energy transition, and leading discussions at global fora such as G20 and QUAD, India's story aligns perfectly with the five interconnected priorities of the WEF – Rebuilding Trust, Reimagining Growth, Safeguarding the Planet, Investing in People, and Industries in the Intelligent Age.

India's delegation is impactful, with four Union Cabinet Ministers and two Ministers of State, and a strong presence of States, led by the Chief Ministers of Andhra Pradesh, Telangana and Maharashtra.

For over four decades, CII has proudly carried the Indian flag at Davos, showcasing the nation's and India Inc's evolving story on this global stage. Aligned to this year's WEF agenda, the curtains were also raised on CII's theme of "Partner with India Inc.: Subscribe to the Future". There is a strong India Inc. presence with over 80 industry leaders from across sectors and scale.

As I walked into the Congress Centre for my meetings, it was equally abuzz, kicking off with the Crystal Awards and the opening concert. During the day, the centre witnessed parleys on geoeconomics, reimagining growth and mapping productivity solutions.

A notable highlight was the focus on rebuilding trust amid geopolitical tensions and policy shifts as US withdraws from the Paris Climate Agreement and the establishment of an "External Revenue Service". Safeguarding the Planet was a recurring theme as well. European Commission President Ursula von der Leyen declared, *"The world is undergoing an energy transition that is unstoppable."* India's leadership in renewable energy, green hydrogen, and sustainable living through Mission LiFE mirrors this sentiment which echoed on the streets of Promenade.

Walking back through the snow-laden streets, one thing was clear – India isn't just participating in Davos 2025, it is taking centre stage, redefining what collaboration in the Intelligent Age looks like – and perhaps converting a few delegates into *chai* enthusiasts along the way at the India Lounges – perfect places for an "India Adda".

(The writer is the Director General of Confederation of Indian Industry, CII)

THE DAILY QUIZ

Please send in your answers to dailyquiz@thehindu.co.in

January 21 marks the 80th death anniversary of Rash Behari Bose, one of the founding leaders of the Indian National Army. Here's a quiz related to the INA

Srinivasan Ramani

QUESTION 1
An officer of the INA and a doctor and one of the founding members of the All India Democratic Women's Association, she was also a candidate in the presidential elections held in 2002. Name her.

QUESTION 2
The answer to Q1 was married to this colonel who was among three INA officers who were sought to be court-martialled by the British. Name all three of them.

QUESTION 3
Name the person who donned the lawyer's robe to represent the three INA officers in the Red Fort trial and later, went on to become the Prime Minister of India.

QUESTION 4
Another founding member of the INA, this former British Army officer was captured by Japanese troops in World War II in the Malayan campaign and later on, founded the INA. He wasn't, however, part of the Azad Hind Fauj led by Subhas Chandra Bose. Later on, he became a Rajya Sabha MP. Name him.

QUESTION 5
This officer, who was the General Officer in command of the INA's Burma Command, also served briefly as the Governor of the Andaman Islands during the Azad Hind Fauj's occupation. Name him.

Visual question:
Identify this INA veteran, shaking hands with Italian President Giovanni Gronchi, who went on to become the founding president of the Malayan Indian Congress and was also the ambassador to some countries after Independence. THE HINDU ARCHIVES

Questions and Answers to the previous day's daily quiz: 1. The initial name of Coldplay. **Ans: Pectoralz**
2. Name the band's first full-length album. **Ans: Parachutes**
3. This tech mogul's memorial service in 2011 had a performance by Coldplay. **Ans: Steve Jobs**
4. The day fans observe to mark the event of one of the band's first songs being leaked online. **Ans: St. Odes Day on January 13**
5. Name the band's song which was inspired from the aftermath of the 9/11 terror attack in the U.S. **Ans: politik**
6. Name the band member who made a cameo appearance in *Game of Thrones*. **Ans: Will Champion**
Visual: Name this Coldplay song. **Ans: Hymn for the weekend**
Early Birds: Nobody got all the answers correct.

Why are antivenoms not easily accessible in India?

A landmark 2020 study by researchers from Canada, India, and the U.K. estimated that between 2001 and 2014, a staggering 1.2 million snakebite deaths and three-times as many cases of disability occurred in India

R.N.V. Krishna Deepak

On New Year's Day, five-year-old Mayuri lost her life to a snakebite in Uttara Kannada district in Karnataka. The delay in receiving antivenom and the unsafe conditions at her anganwadi tragically sealed her fate. She became one of the estimated 58,000 Indians who die every year from venomous snakebite, a terrible number that renders India the 'snakebite capital' of the world and highlights the scale of this preventable crisis. What makes snake venom so deadly, and how does antivenom neutralise its effects?

What are antivenoms?

Antivenoms, or antivenins, are life-saving medicines used to treat snakebites. They are produced by injecting small amounts of venom into animals, usually horses, which then produce antibodies as part of their immune response. These antibodies become antivenoms.

Snake venom is one of nature's most lethal weapons, a complex cocktail of toxic proteins, each tailored by evolution to immobilise, and in some cases to digest, prey and defend against threats. When a sufficient quantity of venom is injected during a snakebite, the toxins wreak havoc on the human body in multiple ways. Haemotoxins destroy blood cells and disrupt clotting. Neurotoxins block nerve signals and paralyse. Cytotoxins dissolve tissue at the bite site. The effects are often fatal without medical intervention.

Antivenoms are the frontline defence. They work by specifically binding to the venom toxins to render them ineffective, allowing the body's natural defence systems to clear them safely over time. But for antivenom treatment to succeed, responders need to know which snake species inflicted the wound and how much venom it injected.

Polyvalent antivenoms (PVAs) currently used in India target multiple species. However, their efficacy varies against less common snakes. Understanding each venom's complexity and the mechanisms of antibody production remains central to improving treatments.

How do antivenoms work?

The production of antivenom is a remarkable interplay of human ingenuity, animal resilience, and immunological mastery, dating back to the pioneering work of French physician Albert Calmette in the 1890s. He developed the first antivenom using horses, a practice that continues today.

To produce antivenom, healthy and mature venomous snakes are first captured from the wild by trained experts who then "milk" the snakes to extract the venom. Next, they immunise horses with increasing doses of venom over many weeks, allowing their immune systems to produce antibodies. The dose of venom injected into horses is critical: too little and the immune response will be weak; too much and the horse's body could be damaged.

Over time, the horses develop a robust immune response, producing antibodies that neutralise venom toxins. The antibodies thus produced are very specific to the type of toxins injected, like a lock and its key. This process mirrors how humans develop resistance to familiar pathogens like the flu or common-cold viruses – through repeated exposure or vaccination. The experts extract these antibodies from the horse's blood and purify and formulate them as antivenoms.

Dangerous process: A snake-catcher extracts venom from a cobra at the venom extraction centre of the Irula snake-catchers cooperative near Mahabalipuram in 2024. B. VELANKANNI RAJ

Several companies in India, including Bharat Serums and Vaccines, Haffkine Bio-pharmaceutical Corporation, and ViNS Bioproducts, produce antivenom this way. The Irula tribe of Tamil Nadu plays a crucial role in this process. The Irular people are skilled snake-catchers and can safely extract venom from snakes in controlled environments. Their expertise ensures a steady supply of high-quality venom for antivenom production in India. Without their contribution, the supply chain for these drugs would collapse.

How common is snakebite in India?

India is home to more than 300 species of snakes, of which more than 60 are venomous, ranging from mild to high. The so-called Big Four – Indian cobra (Naja naja), common krait (Bungarus caeruleus), Russell's viper (Daboia russelii), and the saw-scaled viper (genus Echis) – account for most snakebite deaths. The venom extracted from these four species is used to produce PVAs in India.

On the flip side, this means other venomous snakes – including the king cobra, monocled cobra, banded krait, Sochurek's saw-scaled viper, hump-nosed viper, and several species of pit vipers – are not covered by existing PVAs and continue to pose significant risks. As a result, victims bitten by these species often receive ineffective treatment, leading to poor outcomes.

A landmark 2020 study by researchers from Canada, India, and the U.K. estimated that between 2001 and 2014, a horrifying 1.2 million snakebite deaths and three-times as many cases of permanent disability occurred in India. The study also said one in 250 Indians were at risk of dying from snakebite before the age of 70.

These staggering mortality numbers reflect a pernicious combination of ecological, social, and systemic factors. People in rural India like agricultural workers are disproportionately affected and face a constant threat, particularly during the monsoon, when snakes become more active. Rapid, often unplanned urbanisation, poor garbage management, and urban floods have increased encounters between humans and snakes, making even city-dwellers vulnerable.

Why are antivenoms hard to get?

India is the world's largest producer and consumer of antivenoms in the world. However, access to timely medical care remains a significant challenge for many Indians. People in remote areas often undertake long journeys to reach a healthcare facility equipped with antivenoms.

Even when antivenom is available, improper administration and inadequate facilities exacerbate the crisis. Logistical issues, unequal access to care, superstitious beliefs, and cultural practices often delay proper treatment in many parts.

Antivenoms often need to be transported in cold storage, however, India's rural parts lack the supporting infrastructure and power supply. Facilities that 'make do' with the resources available can cause the antivenoms to degrade in storage and become ineffective.

The high cost of manufacturing antivenom limits accessibility for the economically-disadvantaged. This mismatch highlights the need for tailored solutions, underscoring the importance of targeted research and innovation.

How are antivenoms changing?

Antivenoms of the future are more promising. Researchers are using recombinant DNA technology to produce lab-engineered, synthetic antivenoms that are free from animal-derived proteins and offer greater safety and efficacy. Computer-designed proteins could accelerate development by helping researchers to optimise antibodies for different clinical settings.

For example, on January 15, researchers from Denmark, the U.K., and the U.S., led by 2024 Nobel laureate David Baker, reported successfully using Artificial Intelligence (AI) to design synthetic antivenoms. Their and other breakthroughs promise greater effectiveness, availability, and the potential to replace century-old methods to produce antivenoms.

Region-specific antivenoms are another promising avenue. The work of Karthik Sunagar at the Indian Institute of Science, Bengaluru, has already shed light on cross-species and geographic variability in venoms.

By mapping the toxins' compositions, scientists are attempting to create tailored antivenoms, holding the promise for more precise treatments. Portable venom-detection kits and rapid diagnostic tools are also helping guide effective antivenom use. With continued investment in research, public education, and infrastructure, India can address its snakebite crisis, with reason to hope tragedies like Mayuri's will become a thing of the past.

R.N.V. Krishna Deepak studies snake venoms using computational methods at Azim Premji University, Bengaluru.

What is the status of the Smart Cities Mission?

Why did the implementation of smart cities bypass local government and depend on Special Purpose Vehicles? What has happened to the mission in Shimla?

Tikender Singh Panwar

The story so far:

Almost a decade has passed since the Indian government announced the concept of "smart cities" as the new lighthouses of urbanisation. The June 2015 announcement of 100 smart cities aimed to create models of urban development. However, these lighthouses of urbanity have now been relegated to the annals of India's urbanisation history.

What went wrong with smart cities?

The smart cities initiative was based on the Internet of Things (IoT), a framework that works well in advanced capitalist countries where basic utilities are already in place. In contrast, in India, where basic services are still out of reach for many, "smart cities" essentially mean providing fundamental amenities to residents. The plan included two key components – pan-city proposals which includes IT-enabled services like mobility and waste management; and Area-Based Development (ABD) which was restricted to specific zones within a city, focusing on retrofitting, redevelopment, and greenfield projects. Additionally, governance of these projects bypassed local governments, relying instead on Special Purpose Vehicles (SPVs) registered under the Companies Act, and managed like private companies. City councils were excluded, based on the assumption that private company-like structures could deliver better results.

What happened in Shimla?

Shimla was not included in the initial list of smart cities. However, after legal challenges posed by Shimla in the Himachal Pradesh High Court, Shimla was also granted the smart city tag.

Shimla's smart city plan adhered to guidelines, including pan-city initiatives and ABD projects. The city had proposed a mix of retrofit and redevelopment projects within ABD. The retrofit project had targeted improving city wide pedestrian crossings, vehicular mobility on circular roads, and three transport corridors in addition to underground ducting and parking provision. Additional features were also added that included eco-adventure tourism, and water security through storm water and spring water management. A total of 244 acres of land was supposed to be retrofitted. Redevelopment projects focused on Lower Bazar, Ganj Bazar, and Krishnanagar. The aim was to replace dilapidated, unsafe buildings with modern, resilient, earthquake-safe structures that could boost tourism.

The total estimated investment for Shimla was ₹2,906 crore, with funding sources as follows – ₹897.80 crore from Public-Private Partnerships (PPP); ₹101.77 crore through municipal bonds; ₹205.57 crore from external borrowings; and ₹348.49 crore from State and Union government schemes, and the rest from other sources. However, as of now, according to the Smart City dashboard, only ₹707 crore (24% of the original budget) has been spent: ₹53 crore on completed projects and ₹654 crore on ongoing ones. The proposed PPP contribution has not yet materialised.

What has been the outcome?

None of the funds have been utilised for the redevelopment of the Lower Bazar, Middle Bazar, or Krishnanagar. Traffic congestion has worsened, and despite initial plans, non-motorised mobility remains neglected. Instead, funds were spent on flower pots worth ₹2 crore. Moreover, large, visually intrusive structures were erected for escalators that remain non-operational, obstructing Shimla's iconic valley views.

As the Smart City Mission approaches its final chapter, the lessons are glaringly evident. Projects devoid of meaningful urban governance and public involvement, are bound to fail. With no ownership or accountability, the smart city vision has faded into oblivion.

Tikender Singh Panwar is a former deputy mayor of Shimla and Member, Kerala Urban Commission.

THE GIST

- The smart cities initiative was based on the Internet of Things (IoT), a framework that works well in advanced capitalist countries where basic utilities are already in place.
- Governance of these projects bypassed local governments, relying instead on Special Purpose Vehicles registered under the Companies Act. City councils were excluded, based on the assumption that private company-like structures could deliver better results.
- Projects devoid of meaningful urban governance and public involvement, are bound to fail.

India's 2030 target for renewable energy production

500 in GW. The government is committed to increasing the production of renewable energy in the country by 2030 and meet 50% of the energy requirement from renewable sources, Union Minister Pralhad Joshi said on Tuesday. PTI

India's national sex ratio at birth in 2023-24

930 The government will organise celebrations to commemorate the 10th anniversary of the Beti Bachao Beti Padhao initiative. Beginning on Wednesday, the celebrations will continue till March 8, which is observed as International Women's Day. PTI

A sweet win for turmeric farmers

The National Turmeric Board needs adequate funds to fulfil its objective

STATE OF PLAY

Ravi Reddy
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This year's Sankranti was particularly sweet for the turmeric farmers in Telangana as their nearly two decade-long demand for a National Turmeric Board (NTB), headquartered in Nizamabad, became a reality when Union Minister of Commerce and Industry Piyush Goyal inaugurated it on the day of the festival. Turmeric is widely cultivated in Nizamabad and parts of north Telangana along the Godavari river.

Mr. Goyal said the Board would boost exports of about 30 varieties of turmeric grown in 20 States, including Maharashtra, Tamil Nadu, Andhra Pradesh, Madhya Pradesh, and Meghalaya. The Board has been entrusted with the task of promoting research and development of new products and exploring the scope for value addition to turmeric-related products for markets abroad. There are plans to leverage the medicinal value of turmeric extensively.

According to the Union government, in 2023-24, 3.05 lakh hectares were under turmeric cultivation in India, which produced 10.74 lakh tonnes of the crop. India accounts for 70% of global turmeric production with Telangana playing a key role in cultivation. In 2023-24, 1.62 lakh tonnes of turmeric and turmeric products valued at $226.5 million were exported.

The demand for a Board began in 2006. The Swadeshi Jagran Manch, an organisation for the welfare of the farmers, asked for remunerative prices for turmeric and highlighted the need for an exclusive Board for the crop. According

to Kotapati Narasimham Naidu, founder-president of the Telangana Turmeric Farmers Association, the then Chief Minister, Y.S. Rajasekhara Reddy, responded positively to the demand and ensured that a Turmeric Research Station was established in 2007 at Kammarpally.

Turmeric farmers, who have seen highs and lows in crop production, continued to demand a Turmeric Board along the lines of the Spices Board, Tobacco Board, and Silk Board. They contended that it would bring in innovative farming technologies, add value to the crop, boost production, and improve remuneration for the crop.

The issue took a political turn in the 2019 general elections. The BJP candidate from the Nizamabad Lok Sabha constituency, Dharmapuri Arvind, a political debutant, signed a judicial bond paper saying he would quit as MP within days of winning if he was unable to get the Board established. This caught the attention of the electorate. The Bharat Rashtra Samithi (BRS) candidate, K. Kavitha, daughter of the former Chief Minister K. Chandrashekar Rao, faced a humiliating defeat from the constituency.

The BJP MP dragged on the issue, however. When the Centre announced a regional office of the National Spices Board, farmers were furious. A month before the Telangana Assembly elections in 2023, Prime Minister Narendra Modi announced that the Board would be set up. A gazette was issued on October 5, 2023, announcing this, but it did not mention where the Board would be headquartered. This again led to another round of war of words between political parties. During the 2024 general elections, the Congress, the BJP, and the BRS argued about the failed promise.

The sudden announcement of the National Turmeric Board with its headquarters in Nizamabad has given the BJP a shot in the arm. But the Congress too tried to stake its claim in the development with its leaders calling for comprehensive support to farmers including a robust marketing system, godowns, cold storage facilities, and an assured minimum support price (MSP).

While the establishment of the Board is a watershed moment for the farmers in Nizamabad district, a lot needs to done for its effective functioning. The first demand is a MSP for turmeric. Farmers have been worried that prices keep fluctuating. Last year, turmeric was sold in the Nizamabad agriculture market between ₹15,000 and ₹18,000 per quintal. Now, it is priced at ₹10,000 per quintal.

Putting in place robust infrastructure such as buildings for the Board, and training, research and development centres are the need of the hour. Farmers believe that the Research Centre at Kammarpally can be brought under the purview of the Board.

The purpose of the Board will be served only when there is decent budgetary allocation to meet all the needs. In the initial period, the Board needs to be closely monitored and given adequate funds so that the farmers' dreams are fulfilled.

The world has been changing for a while

One of the things one learns as a historian – and as a traveller – is that places change. I was in Chennai for the wonderful Lit for Life festival alongside a host of stellar thinkers and speakers and marvelled at the transformation of the city. I do not mean the airport that has been upgraded since I last came to Tamil Nadu, or the infrastructure that is changing daily life for Chennai's inhabitants, but something more fundamental.

Environmental change

In 2019, Chennai declared 'Day Zero', when water ran out. Many recognised that water management needed to be overhauled; some questioned the viability of a city that was unable to meet such basic needs. Five years on, the story could not have been more different: unseasonal and catastrophic storms and torrential rains left the city inundated. People were driven out of their homes not because of too little water, but too much.

We are living through a major environmental reorganisation and we can learn from previous episodes of disruption and change. The difficulty, as shown so clearly by the case of Chennai, is that it is not enough to prepare for droughts or for deluges, but to prepare for both.

Such lessons are particularly important today because of the scale of the climatic shifts that are taking place: no human has ever lived in such a warm world, nor one with such high concentrations of carbon dioxide in the atmosphere. Half of all fossil fuels have been burned by humans since Sachin Tendulkar made his Test debut for India. That does not feel so very long ago to me.

Environmental change is all the more challenging because it is just one of a set of revolutions that are transforming the world around us. New technologies are giving us new powers to communicate and share with each other, but also to rile, antagonise and threaten, helping polarise political discussion.

Peter Frankopan

Professor of Global History at Oxford University

We are not so much on the cusp of a new era but have been in one for some time. And that is what change is all about — invisible, unnoticed and unremarkable

The return of Trump

Ironically, while political leaders in some countries may think they are giving people what they want, the evidence suggests otherwise: in 2024, more people cast their votes at the ballot box around the world than in any year in history. While each country has its own story, one common trend was that political parties that were in power either found it almost impossible to remain in office and were voted out, or had their majorities sharply reduced.

There are many explanations as to why. But the most persuasive would seem to be that voters can see the world changing in front of their eyes and are hungry for ideas of how to best embrace the opportunities and how to cope with the disruptions of the modern age. That is best summed up by the return of Donald Trump to power, something that has been accompanied by question marks not just about the role of the U.S. in global affairs, but of its long-term role as a stabilising force. Mr. Trump's well-publicised comments about buying Greenland, taking the Panama Canal, or using 'economic force' to compel Canada to join the U.S. can perhaps be taken with a pinch of salt. But India's ever-astute Minister of External Affairs S. Jaishankar is right to note that Mr. Trump's return to the White House may have "profound consequences for the global order." Indeed, added Mr. Jaishankar, "we may well be on the cusp of a new era."

Just look, then, at the case of TikTok. On Sunday, it began to shut down following outgoing President Joe Biden's decision that the Chinese company posed a threat to U.S. national security. With Mr. Trump's anti-China rhetoric, one might have expected this to be confirmed. Instead, he intervened to keep the company alive, at least for now.

That fits exactly within Mr. Trump's sweet spot of being pragmatic and open to business – though it also shows his opportunism: Tik Tok would make a nice 'thank you' present for Elon Musk for his crucial support during the election, one that has the further advantage of keeping Mr. Musk busy. That Mr. Trump rode in to save a Chinese business, rather than destroy it, is instructive about how he thinks.

The road ahead for India

As for India, things look more complicated. The world looks different from when we saw the 'Howdy Modi' and 'Namaste Trump' events of 2019 and 2020. For one, it will be harder for Delhi to play the game of multiple alignments of being a leading part of both BRICS and the Quad, of getting oil from sanctioned entities, of buying U.S.-made Apache helicopters but also Russian S-400 air defence systems. India has made a virtue of trying to keep all options open. That will come under pressure in the next four years as Mr. Trump is the sort of leader who does not want his friends to have other friends.

The winds of change are blowing, in other words. Mr. Trump took office hours after the first proper breakthrough in West Asia, with many hoping that the devastation of Palestine is finally now over. He faces an Iran that is weaker and more exposed than perhaps at any time in the last 40 years, a Russia that has enfeebled itself economically, culturally and militarily through the invasion of Ukraine, and a China whose outlook on global affairs has moved substantially in the last decade. Of all of Mr. Trump's qualities, the most important is that he is lucky with his timing.

If you ask a historian, we are not so much on the cusp of a new era but have been in one for some time. And that, of course, is what change is all about – invisible, unnoticed and unremarkable. Luckily, historians can tell you a thing or two about that.

Trump 2.0 as disruptor of the global legal order

Donald Trump's second term as President of the United States marks the start of a new 'Trumpian' era, defined by his leadership. Foreign policy experts expect that Mr. Trump will continue to embody the image of a disruptor. The international legal order is expected to experience substantial changes.

As the leading global power of our time, the U.S. has always maintained a complicated relationship with international law. The U.S. has played a vital role in establishing many key institutions and frameworks within international law, as well as in shaping their norms, priorities and agendas to align with American interests. This influence is evident across various areas of international law, including climate change law, space law, human rights law, and trade and investment law. At the same time, America has often followed a policy of exceptionalism, i.e., an attitude of being 'distinct' and thus an 'exception' to the law that binds all other nations. Thus, the U.S. has been criticised for violating or sidelining the same norms and institutions of international law that it helped create and expects other countries to follow.

Prabhash Ranjan

is Professor, Jindal Global Law School

Rahul Mohanty

is an Assistant Professor, Jindal Global Law School

President Donald Trump's renewed majority and control over the U.S. Senate and the House are likely to help him push forward his policies more effectively

The Trump 1.0 years

While this has been the case for many American presidencies, the Trump Presidency took it to a completely different level, almost waging a war on international law. Elected with the slogan of "America First", Mr. Trump's first term reflected what international law scholars Oona Hathaway and Scott Shapiro call a 'sovereigntist view of international law' which often misconceives entering into multilateral treaties as putting unacceptable limits on sovereign authority. Mr. Trump's first term was marked by scepticism towards multilateralism and a preference for bilateralism, which is usually the case of emerging revisionist powers but strange for the incumbent superpower.

Accordingly, the Trump administration, in June 2017, famously walked away from the Paris Agreement on Climate Change. Washington also reneged on a key nuclear treaty with Russia and a nuclear deal with Iran. Mr. Trump also posed major challenges to the international trade regime by using tariffs and other protectionist measures, including against allied countries.

He continued blocking appointments into the World Trade Organization (WTO)'s Dispute Settlement Body's Appellate Body, which ultimately led to the organ becoming dysfunctional. Under his presidency, the U.S. withdrew from the Trans-Pacific Partnership (TPP) agreement that the Obama administration had so assiduously crafted and put an end to the North American Free Trade Agreement or NAFTA and negotiating a new trade agreement. Additionally, during the Trump first term, the U.S. withdrew from several international institutions such as the United Nations Educational, Scientific and Cultural Organization (UNESCO), attempted to withdraw from the World Health Organization (WHO), and threatened withdrawal from the WTO.

Another onslaught

Mr. Trump's return to the White House could accelerate the weakening of the normative authority of multilateral institutions. While the U.S. rejoined many of the multilateral institutions under the Biden administration, it might again disengage from them. In fact, within hours of his inauguration, he reportedly signed executive orders initiating the U.S.'s withdrawal from WHO and the Paris Agreement. Mr. Trump has announced fresh plans to pursue unilateralism by raising tariffs, even if it triggers a trade war and violates WTO rules.

He has already announced that he may impose a 25% tariff on imports from Mexico and Canada. His belligerent onslaught on the Washington Consensus-based international trade and investment law model will continue unabated. Any hopes of the Global South of reviving the WTO's dysfunctional Appellate Body should be abandoned. While some hoped that Mr. Trump's policies may translate into renewed U.S. isolationism and less interventionism, his recent statements belie such hopes.

His plans to annex Greenland and the Panama Canal, refusing to rule out coercive methods to do so, and include Canada as the 51st State of the U.S., are reminiscent of the 18th-19th century era of great powers acquiring sovereign territories through conquest and gunboat diplomacy. In the post-UN charter era, which considers the prohibition of using force and self-determination as central tenets, such ambitions may embolden other revisionist states such as China and Russia to embark on similar quests for obtaining territory.

As scholars such as Marko Milanović have pointed out, even if Mr. Trump ultimately does not use force, these statements potentially violate the norm of non-intervention under Article 2(7) of the UN Charter, further challenging the international order. The statements made by his allies, such as Elon Musk (who is part of the Trump administration), commenting on the internal politics and laws of allied countries such as the United Kingdom and Germany, have also irked many and could be construed as unacceptable intervention.

Other nations and the legal order

International lawyer Harold Koh has pointed out that the participants involved in the 'transnational legal process', including many officials within the U.S. itself, were able to blunt many of Mr. Trump's policies in his first term, particularly those affecting international law. However, with Mr. Trump's renewed majority and control over both the Senate and the House, it is more likely that he will be able to push forward his policies more effectively. In that case, other countries must cooperate to preserve the international legal order.

The views expressed are personal

Time to seize the promise of the U.S.-India nuclear deal

Sixteen years ago, this writer and other organisers of the Coalition for Partnership with India rejoiced at the final approval of the United States-India civil nuclear deal through the U.S. Congress. The long struggle for passage of the necessary U.S. legislation began in 2005, and it was only in late 2008 that the Coalition succeeded in working with the George W. Bush administration and U.S. Congressional leaders to make the deal legal under U.S. law.

The Coalition for Partnership with India was a loose association of businesses, Indian-Americans, and academics that supported U.S. approval of the deal in the face of fierce opposition that stipulated that the deal would promote the proliferation of nuclear weapons. As a consultant to the U.S.-India Business Council, this writer was privileged to recruit and act as a liaison among Coalition components, plan strategy, and advocate before the Congress.

A game-changing deal

The U.S.-India civil nuclear deal was a watershed moment and opened a whole new era in defence and strategic cooperation for the two democracies that had become estranged during the Cold War. Without the trust engendered by the willingness to cooperate in dealing with the most powerful and potentially most destructive technology ever seen, the present level of U.S.-India interaction on defence purchases and manufacturing, military exercises, technology transfer, intelligence sharing, and crisis management would never have occurred.

And yet, the energy and commercial promises of the U.S.-India deal have never been fulfilled. Those of us who supported and advocated for the deal envisaged the augmentation of the Indian civil nuclear sector with many plants being built using U.S. equipment, technology, and allied services. Employment would be created both in the U.S. and India. More electricity would be generated by plants to fuel Indian industry and benefit the average Indian. This energy would not generate greenhouse gases and help wean India away from an over-reliance on climate changing, and often toxic, fossil fuels. Even though U.S. President Barack Obama announced in 2016 that Westinghouse would build six new nuclear plants in India, this has not happened yet.

Jake Sullivan, in his last trip to India as U.S. President Joe Biden's National Security Adviser, announced, "... the United States is now finalizing the necessary steps to remove long-standing regulations that have prevented civil nuclear cooperation between India's leading nuclear entities and U.S. companies." Will this development be the mechanism that breaks the logjam that has prevented the U.S.-India deal from fulfilling its true potential? If only it were so simple.

Raymond E. Vickery, Jr.

is a Senior Associate (Non-resident) at the Chair on India and Emerging Asia Economics, Center for Strategic and International Studies (CSIS), Washington, DC. He also worked with the Coalition for Partnership with India on the U.S.-India Civil Nuclear Initiative. He previously served as Assistant Secretary of Commerce for Trade Development, where he launched the U.S.-India Commercial Alliance

There are major challenges that limit the full fruition of the deal, but the Trump administration can iron them out

At the conclusion of the civil nuclear deal in 2008, there were approximately 200 Indian entities on the so-called "Entity List" kept by the U.S. Department of Commerce. In general terms, U.S. companies are prohibited from doing business with companies on this list unless a special licence is granted. In practice, such licences are seldom granted. After the U.S.-India civil nuclear deal, all but a handful of Indian companies dealing with nuclear matters were removed from the list. This was one of the benefits of the deal. Among those remaining, were those that were mainly involved in research and development and thought to involve the risk of nuclear technology leakage into military uses and other security issues, including leakage to Russia and other adversaries of the U.S. Mr. Sullivan, in his speech in New Delhi, made oblique reference to this concern when he said, "As we see more and more new technologies diverted to unfriendly actors, the United States and India will also need to ensure that valuable dual-use technologies don't fall into the wrong hands. This means aligning our export control systems...."

Apparently, the Biden Administration decided that the few remaining Indian nuclear entities on the U.S. Entity list no longer present the kind of security concerns that landed them on that list in the first place. This is all well and good and can be considered progress, although it remains to be seen whether the security and foreign policy agencies under Mr. Trump will agree with that assessment. However, this is not the heart of the problem preventing the U.S.-India civil nuclear deal from reaching its full potential.

The liability risk issue

In 2010, India enacted the Civil Liability for Nuclear Damage Act. This Act was fuelled in Parliament by those who had lost the attempt to block the deal and their anti-foreigner rhetoric, including invocation of the infamous Bhopal/Union Carbide tragedy. The result was India departing from international civil nuclear liability norms and placing major liability obligations not on the operators of a civil nuclear facility but on the suppliers. Neither of the major U.S. suppliers – GE and Westinghouse – was willing to assume these liability risks, and neither the U.S. nor India was willing at that time to step in to ameliorate these liability concerns.

The Indian Government did attempt later to provide some relief from liability risks in conjunction with the resumption of Russian participation in the Indian civil nuclear expansion. Through India's public sector General Insurance Corporation, and four other government companies, a 20-year insurance premium would be charged to cover the supplier's liability for an accident. The Russians accepted this risk amelioration in large part because their overseas civil nuclear entities are government owned, will have a defence of sovereign immunity, and in any case will be protected by the Russian government from liability that might otherwise put them out of business. And the Russians saw their increased participation in Indian civil nuclear development as bearing significant geopolitical dividends. The Russians are now moving forward with India on civil nuclear expansion. The U.S. companies have been unwilling so far to accept this insurance amelioration. Thus, the Trump administration will have to find means to cut the Gordian knot of liability before there will be significant U.S. company involvement in Indian civil nuclear expansion.

Hurdles such as technology, consumer costs

There are other significant barriers to the full involvement of U.S. companies in Indian civil nuclear expansion that have arisen since the 2008 conclusion of the U.S.-India civil nuclear deal. Civil nuclear technology has evolved rapidly. For U.S. companies to be fully involved, they must show that they can offer the latest technology. Most importantly, this technology and its implementing equipment must be offered at a reasonable price that will not increase electricity costs to the Indian consumer. Indian civil nuclear officials are acutely aware of the disastrous cost overruns that have doomed the latest civil nuclear facilities in the U.S. and left ratepayers to shoulder unwelcome costs without improvements in either quantity or quality of services.

All these challenges limit the full fruition of the U.S.-India civil nuclear deal. But they cannot be met by U.S. companies acting alone. The Trump administration can work with Indian and U.S. nuclear companies not just on regulatory issues but also those involving liability, technology, and cost as well. The hour is late, but the benefits to seizing the full promise of the U.S.-India civil nuclear deal will be tremendous.

In breakthrough, scientists find pressure sensor in fat tissue

Gautam Menon, a professor at Ashoka University who studies how cells sense and respond to mechanical forces, called it 'a major discovery.' It has also kicked up a new mystery. As its co-discoverer and 2021 Nobel laureate Ardem Patapoutian remarked, what could the sensor be sensing in fat?

Sayantan Datta

In a video uploaded to the internet in November, Ardem Patapoutian, who shared the medicine Nobel Prize in 2021, unbuttoned his cuff and pulled up his sleeve to reveal a tattoo near his elbow. As he flexed his arm, the tattoo came to life. The tattoo was of the PIEZO mechanosensitive channel – a class of proteins that helps us sense pressure – and the flexing demonstrated how the channel opened and closed in response to pressure.

Patapoutian, a molecular biologist and neuroscientist at the Scripps Research Institute, California, and Bertrand Coste, then a postdoctoral researcher in Patapoutian's lab, discovered the PIEZO ion channels in 2010.

Ion channels are proteins that have a pore in their structure. In response to certain stimuli, the protein's structure changes and the pore widens. When this happens, ions can flow through, changing the voltage across a cell's membrane. If the cell is a neuron, it can use the resulting electric signal to communicate with other neurons. This is how the human nervous system works.

The stimuli that open an ion channel are called its gates. When researchers say voltage-gated ion channels, they mean a particular channel opens when the voltage across a cell membrane changes. Since the ion channels discovered by Patapoutian and Coste were gated by pressure, they called them mechanosensitive ion channels.

They discovered two such channels and named them PIEZO1 and PIEZO2, both from the Greek word 'piezō' meaning 'pressure.'

Since their 2010 discovery, PIEZO channels have been implicated in our ability to sense touch and pain, to understand how our bodies are positioned in space (proprioception), to perceive our body's internal state (interoception), and to respire, urinate, form blood vessels, regulate bone density, and heal skin wounds.

Two new studies – which independent experts called "pivotal" and a "breakthrough" to this reporter – have now expanded the ambit of PIEZO channels' functions.

One, a preprint from the labs of Patapoutian and his colleague at Scripps Research, Li Ye, demonstrates the role PIEZO2 plays in sensing mechanical changes in fat tissue. The second study, published in the journal *Science* and led by Danijela Matic Vignjevic from the Curie Institute in Paris and Tae-Hee Kim from the University of Toronto, shows the importance of the two PIEZO channels in regulating the fate of stem cells in mouse intestines.

The papers lend credence to the idea that biochemical cues don't have a monopoly on regulating biological processes: many of them involve mechanical stimuli as well. The findings open "intriguing avenues for future research," says Namrata Gundiah, a professor of mechanical engineering at the Indian Institute of Science (IISc), Bengaluru, who studies how mechanical stimuli affect the movement of cells, said.

Ardem Patapoutian flexes a tattoo of the PIEZO mechanosensitive channel. ARDEM PATAPOUTIAN/BLUESKY

'What is it sensing in fat?'

The fat, or adipose, tissues in our bodies need to communicate with the brain to adjust the body's metabolism. Typically, scientists study how the brain communicates with adipose tissue through the sympathetic nervous system and how the adipose tissue replies through circulating chemical signals.

But the new Patapoutian et al. study, which is awaiting peer review, focused on a different link between the brain and adipose tissue: sensory afferents.

Neurons are a type of cell that make up our nervous system. Each neuron has two main parts: a cell body and a tail-like extension called the axon. The spinal cord has some cell clusters called the dorsal root ganglia (DRG). The axons of the neurons in these clusters are called sensory afferents. They enter tissues and sense various stimuli.

The researchers injected adipose tissues in mice with cholera toxin-B (CTB) that had been bound to molecules that could glow if hit with light. CTB is a part of the cholera toxin, a set of proteins produced by the bacterium *Vibrio cholerae*. These proteins bind to certain compounds on the membranes of neurons. By injecting CTB in mice adipose tissues, the team could identify these tissues using the glow molecules and isolate them.

When the team looked for the most abundant ion channels in these neurons, they found an unexpected candidate: PIEZO2.

PIEZO2 is known to be a specialised mechanosensitive ion channel: it is gated only by pressure, not other factors. It is thus safe to say these sensory afferents are sensing mechanical changes in adipose tissues.

Gautam Menon, a professor of physics and biology at Ashoka University who studies how cells sense and respond to mechanical forces, called this "a major discovery."

One question, however, remains unanswered: what is the source of these mechanical changes? As Patapoutian remarked on the social media platform Bluesky, "What is it sensing in fat?"

Scientists don't have an answer yet – but the rest of the study shows a way. When the team used genetic techniques to reduce the levels of PIEZO2 proteins in sensory afferents, they found that parts of the adipose tissue innervated by these afferents had larger cells. These parts also express more genes involved in metabolic processes that help the body produce heat and convert carbohydrates, proteins, and alcohol into fat. These changes have been previously reported to result from the removal of DRG – where the sensory afferents are rooted – in mice.

The researchers also showed that if the levels of PIEZO2 are artificially increased in mice whose DRGs have been removed, the changes of such removal can be reversed.

Taken together, the experiments suggest that different metabolic processes in adipose tissue cause mechanical changes in the tissue. The sensory afferents sense these mechanical changes through PIEZO channels and communicate them to the brain.

A gut feeling

In 1745, German physician Johann Nathanael Lieberkühn described in detail glands found between finger-like projections called villi in the small intestine. These glands house intestinal stem cells (ISCs) that have the ability to develop into other cell types required by the intestinal tract. The development process is tightly controlled and important to regenerate and maintain the gut lining.

The cells of these glands are arranged in a particular pattern on a network of proteins and other molecules called the extracellular matrix. The matrix helps keep the gland tissue stiff, which is another way to say the glands are potentially capable of sensing and responding to mechanical stimuli. The ISCs also exert forces on other cells in the gland as they change into other cell types.

To understand how these mechanical forces affect the ISCs, researchers in the labs of Vignjevic and Tae-Hee Kim generated 3D miniature guts, called organoids, on Petri dishes. These mini-guts replicate the structure and function of the intestines in animals, albeit in simpler fashion. The researchers then used chemicals to inhibit PIEZO channels in the mini-guts, reducing the size of the organoids, the number of glands in each organoid, and the number of ISCs.

When they removed the PIEZO channels in the guts of living mice, the animals suffered from diarrhoea, showed blood in their stools, had lower body weight, and "died quickly" Kim said. The team concluded that "PIEZO channels in intestinal epithelia are essential" to maintain "adequate intestinal architecture and homeostasis."

The ISCs in mice whose guts lacked PIEZO channels also lost their ability to reproduce more ISCs and transform into other cell types. Instead, they became cells that divided rapidly and depleted away.

In subsequent experiments, the researchers modelled the mechanical forces on ISCs. In one approach, they modelled how the stiffness of the extracellular matrix changed; in the other, they studied the tension (the force exerted on an object when it is pulled) in the tissue. In the first approach, the scientists grew mini-guts – this time 2D – on artificial substrates whose stiffness they could control. Then they quantified the activation of PIEZO channels by measuring the amount of calcium in the cells of the organoids. When PIEZO channels open, they allow calcium ions to enter cells.

In their paper, the team reported the PIEZO channels were "more prone to activation" on stiffer substrates. Using atomic force microscopy, they found the area of the gland where the ISCs lived was stiffer than elsewhere. The researchers concluded the PIEZO channels were important for ISCs to sense and respond to stiffness.

In the second approach, the researchers engineered a "cell-stretching device" to stretch the mini-guts. At the same time they inhibited PIEZO activity using chemicals, they found that the number of ISCs dropped.

Taken together, the researchers concluded that PIEZO channels help ISCs sense mechanical changes in their surroundings, which in turn regulates their behaviour.

When PIEZO channels were removed from the guts of mice, the animals suffered diarrhoea, showed blood in their stools, lost body weight, and 'died quickly.' The team concluded that PIEZO channels are essential" to maintain 'adequate intestinal architecture and homeostasis'

Kim said, "Stem cell activity is dysregulated in many gut diseases such as inflammatory bowel disease and cancer. Thus, a better understanding of the mechanistic roles of PIEZO channels would help identify novel therapies against them."

The physics of biology

For Gautam Menon, the *Science* study "adds to the view that mechanical signals, as opposed to purely biochemical ones, play an important role in deciding stem cell fates."

Two decades ago, he said, the prevalent view was that the type of cells that stem cells turn into is determined only by biochemical signals in the form of small molecules. Since then, scientists have found more and more evidence that "the mechanical environment of cells and the forces that act on them" play an important role in deciding their fate, he added.

As the view has changed, researchers have confronted newer – and according to Menon, "harder" – questions. These include "measuring forces in a cellular context that is realistic and figuring out how these forces produce signals that cells can interpret."

The two new studies imply the PIEZO mechanosensitive ion channels might be the answer to the latter: these channels sense mechanical forces and open in response, allowing calcium ions to flow into cells. These ions can then trigger a series of changes within the cells that determine their fate.

Kim hopes the team's study motivates other researchers to investigate the roles of PIEZO channels in stem cells of other tissues, especially when there is tissue disease. This " would be critical for the development of more effective and targeted therapies," he said.

(Sayantan Datta is a science journalist and a faculty member at Krea University. dattasayantan95@gmail.com)

DRDO holds key test for hypersonic missiles

The Hindu Bureau
NEW DELHI

In a crucial milestone in the development of next-generation hypersonic munitions, the DRDO has successfully demonstrated a cutting-edge active cooled scramjet combustor ground test for the first time in India. This is the effort to develop a long-duration supersonic combustion scramjet powered hypersonic technology.

The key to hypersonic vehicles is scramjets, which are air breathing engines capable of sustaining combustion at supersonic speeds, the DRDO said. "The ground test of scramjet combustor showcased several achievements, demonstrating its potential for operational use in hypersonic vehicles, like successful ignition and stable combustion".

India, France to work together on maritime surveillance in IOR

The Hindu Bureau
NEW DELHI

India and France have agreed to explore opportunities for coordinated surveillance whilst deployed to counter threats to the maritime security in the Indian Ocean Region (IOR). The two countries also committed to supporting each other in maritime security engagements.

"Both sides agreed to strengthen existing mechanisms of cooperation such as implementation of the agreed framework of exchange of information through enhanced information exchange between Information Fusion Centre-Indian Ocean Region, Gurugram and Regional Coordination Operations Centre, Seychelles and Regional Maritime Information Fusion Centre, Madagascar in the IOR," the Ministry of External Affairs said in a statement after the seventh India-France maritime cooperation dialogue held recently.

Threats such as piracy, contraband smuggling and illegal fishing to be monitored

India and France agreed to develop a joint assessment of the threats to maritime security in the region; to counter illicit maritime activities, including piracy and armed robbery, maritime terrorism, contraband smuggling, illegal and unregulated fishing; hybrid as well as cyber security threats and marine pollution, the Ministry said. Officials said the efforts for coordinated surveillance will be to address these kind of threats.

India, France discuss civil nuclear issues ahead of PM's visit to Paris

Suhasini Haidar
NEW DELHI

India and France have agreed to boost cooperation in "high-end technology sectors", as senior officials held Foreign Office consultations in Paris, and discussed long-pending civil nuclear cooperation issues ahead of Prime Minister Narendra Modi's visit next month.

A delegation, led by Foreign Secretary Vikram Misri and including newly appointed Indian Ambassador to France Sanjeev Singla, met French Secretary-General for Europe and Foreign Affairs Anne-Marie Descôtes and French Foreign Minister Jean-Noël Barrot.

Mr. Modi will travel to Paris for a Summit for Action on Artificial Intelligence on February 10 and 11. Officials also discussed the Prime Minister's programme and bilateral agenda during the visit. Last week, a French Minister had announced that India will "co-chair" the summit.

Foreign Secretary Vikram Misri with Secretary-General of the French Ministry for Europe and Foreign Affairs Anne-Marie Descôtes. PTI

Mr. Misri and Ms. Descôtes held a meeting of the India-France Special Task Force on Civil Nuclear Energy, which was decided during Mr. Macron's visit to India last January. In the joint statement issued a year ago, the two sides had agreed to convene the Special Task Force "within three months".

Jaitapur project

In particular, talks between the two sides have not resolved issues on the much-delayed Jaitapur Nuclear Power Project in Maharashtra, despite a revised techno-commercial offer being made by French energy company EDF (Electricite De France) in 2022.

India and France signed a civil nuclear agreement in 2008 and inked the first MoU for the 990-MW Jaitapur plant in 2009. Officials have said that the high project cost, time overruns and the continuing logjam over India's civil liability law (Civil Liability for Nuclear Damage Act, 2010) are among the issues still being discussed on the Jaitapur project, even as India and France look towards cooperating on Small Modular Reactor in the future.

In a statement issued after the talks, the Ministry of External Affairs said that the two sides held talks on a number of areas of bilateral cooperation including "defence, civil nuclear energy, space, cyber and digital and AI".

'Competent' to judge Indus Water Treaty dispute, says World Bank Neutral Expert

Jacob Koshy
NEW DELHI

The Neutral Expert (NE) appointed under terms of the Indus Water Treaty (IWT), 1960, decided that he was "competent" to decide on differences between India and Pakistan on the design of hydroelectric projects built on the Indus Treaty rivers. India, in a statement, on Tuesday "welcomed" the move.

The decision on January 7 by Michel Lino, the World Bank appointed NE, which was made public via a press release on Monday, however does not help resolve a demand by India in January 2023 to renegotiate the IWT but only keeps alive the differences between the two countries on the dispute resolution mechanism, laid out under the terms of the treaty.

Last September, *The Hindu* had reported that India decided there would be no more meetings of the Permanent Indus Commission (PIC), made up of representatives of both countries until the IWT was renegotiated. The last meeting happened in Delhi in May 2022. Since January 2023, India has written four times to Pakistan to initiate talks on revising the treaty but is yet to receive a formal response.

Work in progress on the Kishen Ganga Hydro Electric Power Project in North Kashmir district of Bandipora in 2012. NISSAR AHMAD

Differing stance

The dispute resolution mechanism laid out under the terms of the IWT – as India interprets it – says that disputes must first attempt to be resolved by the PIC. If they do not succeed, the matter would be weighed by the World Bank-appointed Neutral Expert. If this fails too, the matter would be decided by a Court of Arbitration. However, while India has held that each step must be fully exhausted before both sides agree to moving on to the next step, Pakistan has moved on without waiting for India's concurrence.

Initially, both countries seemed to agree on the World Bank appointing a "neutral expert". Pakistan in 2016 asked for a Court of Arbitration. The World Bank first ruled that having a neutral expert and court together could lead to "contradictory outcomes". However, in 2022, it facilitated the setting up of an expert as well as a chairman to the Court of Arbitration. India has refused to attend proceedings in the Court of Arbitration at The Hague. Pakistan has maintained that it is working within the terms of the treaty, whereas India says the treaty does not allow such parallel dispute mechanisms.

The press statement, issued on Tuesday, said that while the NE could under the terms of the treaty decide on technical disputes it did not invalidate the existing Court of Arbitration.

In the days ahead, Mr. Lino is expected to hear both India and Pakistan and decide on whether design parameters of the Kishenganga and Ratle hydroelectric projects conform with the IWT.

(With inputs from Suhasini Haidar)

Gandhiji was a true Hindu: Siddaramaiah

Rishikesh Bahadur Desai
BELAGAVI

"Some BJP members keep alleging that Mahatma Gandhi was anti-Hindu. But he was a true Hindu. He sought reforms and eradication of social evils like untouchability and discrimination," Karnataka Chief Minister Siddaramaiah said at a programme to unveil the statue of Gandhiji in front of the Suvarna Soudha at Belagavi.

"Till his last breath, he was chanting the name of Lord Ram. Nathuram Godse, a man who was blinded by communal hatred, shot Gandhiji. Even then, Gandhiji said *Hey Ram* and died. There is no need for a better example to prove that he was a true Hindu," Mr. Siddaramaiah said.

Congress chief Mallikarjun Kharge and other leaders at the unveiling of the Mahatma Gandhi statue in Belagavi on Tuesday. P.K. BADIGER

He said while the Congress believes in the Hindu faith as understood by Gandhiji, the BJP believes in "dividing the society on the basis of caste and religion".

Describing Gandhiji's spirit of reforms as true Hinduism, Mr. Siddaramaiah said, "He worked towards the abolition of untouchability, empowering women, and communal harmony. He wanted Hindus and Muslims to live as brothers. He not only helped us fight against British rule but was also instrumental in shaping the post-independence government and system of governance. We should all be indebted to him."

Congress president M. Mallikarjun Kharge on Tuesday countered the BJP's constant allegation that the party had "insulted" B.R. Ambedkar and his legacy, arguing that the saffron party was only "repeating a lie" in the hope of "twisting history" to create artificial differences between leaders such as Gandhiji and Ambedkar.

"The BJP and the RSS are trying to create differences between leaders by twisting history. They are telling false tales to make us believe there were serious differences or even disputes between Gandhiji and Jawaharlal Nehru, Sardar Patel, and Dr. B.R. Ambedkar. These are far from true. But we tend to believe them as we are not doing enough reading ourselves," he said, speaking at the Jai Bapu, Jai Bhim, Jai Samvidhan rally here.

A.P. Chief Minister highlights India's green industrialisation at World Economic Forum

G.V.R. Subba Rao
VIJAYAWADA

On the second day of the World Economic Forum (WEF) in Davos, Andhra Pradesh Chief Minister N. Chandrababu Naidu addressed a special session of the Confederation of Indian Industries (CII) on green industrialisation.

Highlighting his long-standing partnership with the CII since 1995, he reflected on his journey of driving transformative change, citing Hyderabad's emergence as one of India's most liveable cities and a global hub for IT, healthcare, and innovation as proof of concept.

N. Chandrababu Naidu speaking at Davos. X@NCBN

"We have a demographic advantage, and Indian entrepreneurs, especially those from Andhra Pradesh, are excelling globally, contributing to the world economy. India is poised to lead, with Bloomberg predicting it will provide incremental GDP growth by 2027. From 2028 onward, it will be the Indian era," he remarked.

Mr. Naidu emphasised the need for leveraging technologies like AI and real-time data to solve complex problems and improve everyday life, while outlining his vision for the Global Leadership Centre (GLC) in Amaravati to prepare future leaders. On this occasion, a letter of intent was exchanged between the IMD Business School, Switzerland, and GLC to enhance global competitiveness and leadership development.

'Rising illegal migration can upset India's poll mechanism'

The Hindu Bureau
NEW DELHI

Illegal migration is emerging as a problem of unmanageable dimensions and has the potential to upset India's electoral mechanism, Vice President Jagdeep Dhankhar said, addressing students from top educational institutions – IIT Bhilai, IIM, and NIT – in Raipur on Tuesday.

The Vice President's remarks come at a time when the BJP and Aam Aadmi Party are caught in a bitter feud over the inclusion of illegal migrants in the electoral rolls, ahead of the Delhi Assembly elections.

Mr. Dhankhar said that the number of migrants entering the country is mind-boggling and there is not even a "token of resistance" against them. The migrant population, he said, is straining India's resources, adding that the problem has to be dealt with at the earliest.

Vice President Dhankhar in Raipur on Tuesday. PTI

"Every passing day would make resolution complex. We need to address this issue," he said.

There is no justification to allow this migrant population to pour in, Mr. Dhankhar said. "Millions of illegal migrants who have potential to upset our electoral mechanism find easy supporters, especially when people think in terms of petty politics. We must always put the nation first," he said.

UCC is an 'obligation'

The Vice President also took on the critics of Uniform Civil Code. "Those of you who are aware of constitutional provisions would know that it is already a part of the directive principles. An obligation has been cast on governance to have a law, to have a uniform civil code," Mr. Dhankhar averred.

He asked how anyone could object to something which is already written in the Constitution. "We cannot be influenced day in and day out only with the narrow considerations of voting patterns," he said.

Trump declares end to U.S. citizenship by birth

Democratic-led States challenge order that could affect thousands of Indians in the U.S.; President also threatens 100% tariffs on BRICS countries if they attempt to move to 'non-dollar' transactions

Suhasini Haidar
NEW DELHI

Shortly after being sworn in on Monday, U.S. President Donald Trump signed an Executive Order cancelling the provision of "citizenship by birth", which could directly affect thousands of Indian professionals working in the U.S. under H-1B and other temporary visas, who hoped to raise their families there.

Mr. Trump also said he planned to levy "100% taxes" on BRICS countries for attempting to move to "non-dollar" transactions, referring to the 10-nation grouping of emerging economies that includes India.

"As a BRICS nation, they'll have a 100% tariff if they so much as even think about doing what they thought, and therefore they will give it up immediately," he said, erroneously referring to Spain as a BRICS member.

In addition, Mr. Trump's plans to crack down on undocumented and illegal immigrants could hit about 7.25 lakh Indians, of which nearly 18,000 are already on a "final list for removal" or deportations.

Move challenged

A coalition of 18 Democratic-led States along with the District of Columbia and city of San Francisco filed a lawsuit in federal court in Boston on Tuesday arguing that the Republican President's effort to end birthright citizenship was a flagrant violation of the U.S. Constitution.

As concerns grew in India over the announcements, External Affairs Minister S. Jaishankar was set to meet incoming U.S. Secretary of State Marco Rubio to discuss priorities for the India-U.S. bilateral relationship and the Quad.

The one-on-one meeting, which would be Mr. Rubio's first with any foreign dignitary, was due to take place on Tuesday afternoon in Washington, following a meeting of the Quad Foreign Ministers, including Australia's Penny Wong and Japan's Iwaya Takeshi.

The Quad Foreign Ministers are expected to discuss dates for the Quad Summit to be held in India later this year, while during the bilateral meeting Mr. Jaishankar and Mr. Rubio would discuss Mr. Trump's visit to India and taking forward the strategic partnership, as well as the concerns over immigration and tariffs.

According to the public schedule released by the U.S. State Department for the U.S. Secretary of State's first day, after he was confirmed by the Senate on Monday, Mr. Rubio will meet State Department employees and then hold talks with all Quad Foreign Ministers. The meeting of the Indo-Pacific grouping, that China has criticised, is significant as it is Mr. Rubio's first foreign policy engagement.

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Signing spree: U.S. President Trump throws pens used to sign executive orders to the crowd in Washington on Monday. AP

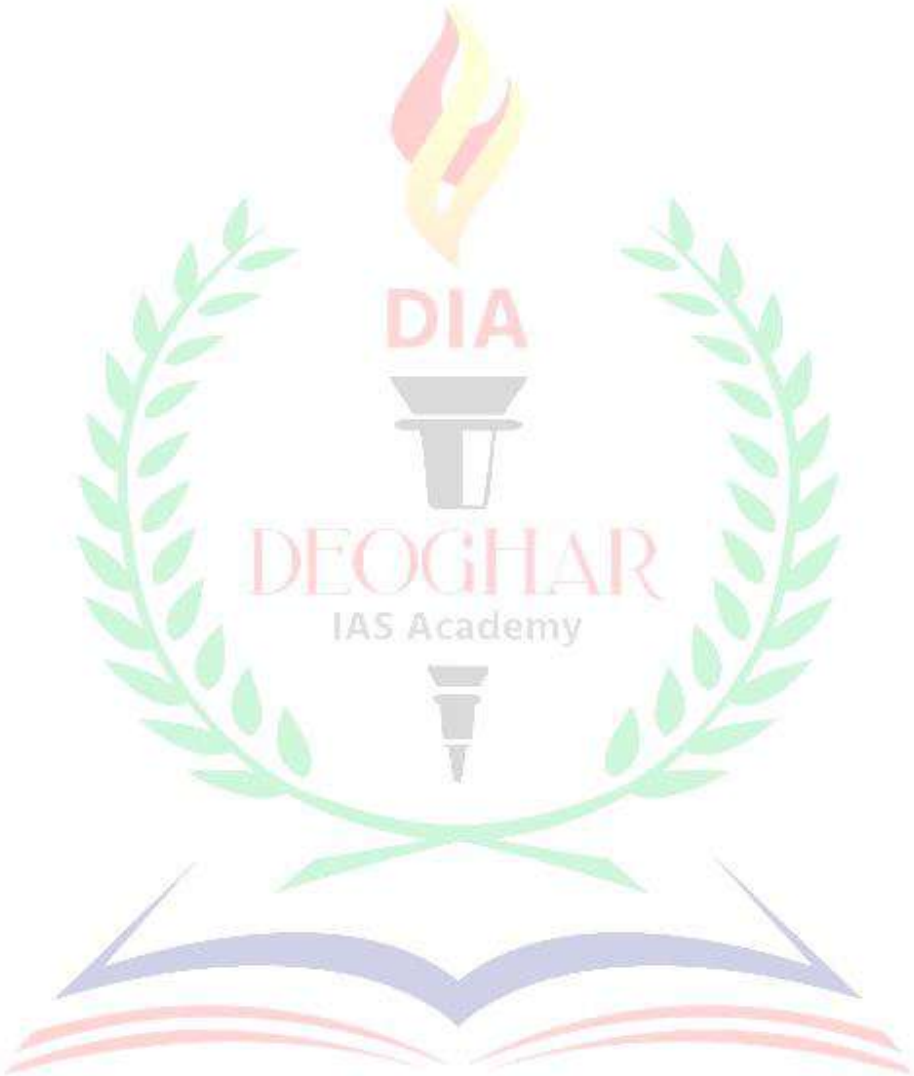
Indian stocks hit as Trump hints at 100% tariffs on BRICS nations

Lalatendu Mishra
MUMBAI

U.S. President Donald Trump's first day in office proved to be a torrid Tuesday for the Indian stock markets with the benchmark indices sinking to their lowest point in about seven months, and all sectoral gauges ending up sharply in the red.

The BSE Sensex plunged 1,235 points to close at 75,838, a level last seen on June 6, 2024, and the NSE Nifty fell 320 points to 23,024. Analysts attributed the sharp downturn to concerns about Mr. Trump's plans to enhance import tariffs and his warning of a 100% duty on products from BRICS nations.

Midcap and smallcap stock indices snapped a five-day rising streak, dropping 2.3% on the NSE.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